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CALIFORNIA DESERT AIR WORKING GROUP

DATA BASE STUDY

VOLUME 6 OF 7

DATA TAPE DOCUMENTATION

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Table of Contents

	Page
1.0 GENERAL INFORMATION	1
2.0 DATA BASE I	2
2.1 Hourly Data File	2
2.2 Daily Data File.	2
2.3 ARMY and NPS Visibility Data Files	2
2.4 Catalogue Data and Catalogue Generating Program Files.	3
2.5 Programing Notes for the Hourly Data File.	3
3.0 DATA BASE II.	4
A FILE INFORMATION FOR DATA BASE I.	A-1
B RECORD INFORMATION FOR DATA BASE I.	B-1
B.1 Master File Data Format	B-2
B.1.1 Format Conversion Subroutine	B-5
B.2 Visibility Data Format.	B-6
C METHOD, POLLUTANT AND UNIT CODES (DATA BASE I).	C-1
C.1 Method and Pollutant Codes.	C-1
C.2 Unit Codes.	C-4
D FILE INFORMATION FOR DATA BASE II	D-1
E MICRO-METEOROLOGY DATA FORMAT, EDWARDS AIR FORCE BASE, 1980 . . .	E-1
F METEOROLOGICAL DATA FORMAT, NATIONAL WEATHER SERVICE, THRU 1980 .	F-1
G EMISSION DATA FORMAT.	G-1
H UPPER AIR DATA FORMAT, EDWARDS AIR FORCE BASE, OCT 1983	H-1
I EPRI AIR QUALITY DATA FORMAT, BLYTHE, 1981-82	I-1
WRAQS Data Tape Inventories	I-2
State-10 Tape File Format Description	I-4
WRAQS Record Format	I-9
Meteorological Data	I-10
Prevailing Visibility and Sky Cover	I-14
Nephelometer Data	I-16
Telerradiometer Data	I-18
Aerosol Data.	I-29
J PIBALL DATA FORMAT, COOLWATER, 1979-82.	J-1
K RESEARCH DATA FORMAT, CHINA LAKE, 1979.	K-1

CALIFORNIA DESERT AIR WORKING GROUP
DATA TAPE DOCUMENTATION

1.0 GENERAL INFORMATION

Under a contract funded by the California Desert Air Working Group (CDAWG), Environmental Monitoring and Services, Inc. (EMSI) has compiled a comprehensive air quality data base for the California desert. The goal of the project was to assemble an adequate data base for future planning and management of desert air resources. Project documentation has been assembled in seven volumes, of which this is volume six.

This document is a specific description of the data tape distribution of the data compiled for the CDAWG. This distribution consists of three data types.

1. Data that was readily converted to a common format.
2. Data that was not readily converted to a common format.
3. Source code listings of the programs that generated the complete catalog.

It should be noted that all the programs listed were written on a DEC PDP-11 using DEC FORTRAN-77 (95%) and DEC MACRO-11 (5%). This code may not be 100% compatible with other FORTRANs. They are documented internally and in the catalogue. Some code changes will be required for use on other machines.

Because of the number of tapes necessary to contain all of the above data, the distribution is split into two (2) separate distributions (Data Base I and Data Base II). Data Base I contains all the data that should be of most interest and is contained on one (1) 2400 foot tape. Data Base II contains other data is contained on six (6) 2400 foot tapes. A complete description of these two data bases follows.

2.0 DATA BASE I

Data Base I consists of 38 files on one (1) tape. The tape is encoded in ASCII at 1600 BPI. The position on the tape, record length and blocking information and a brief description for each file are given in Appendix A. A detailed record description of each file is given in Appendix B. A summary of the data contained in Data Base I follows.

2.1 Hourly Data File

The hourly data file contains all the hourly data that was readily converted into a modified California Air Resources Board (CARB) format. A modified CARB format was chosen because it contained all the needed information and approximately two-thirds of the data are from CARB. The modifications to the standard CARB format were made in order to reduce the record size enough to fit the entire file on one (1) 2400 foot tape. See programing notes below for some hints on the use of this file.

2.2 Daily Data File

The daily data file contains all the daily data that was readily converted into the modified CARB format. See the summary for the Hourly Data File (above) for more information.

2.3 ARMY and NPS Visibility Data Files

These data were not readily converted into the above formats and, therefore, are distributed as sent by the agency. The NPS data are in 22 files by seasons in the same format, and the Army data are in two files with different formats. The file and format information are given in Appendix A and B, respectively.

2.4 Catalogue Data and Catalogue Generating Program Files

This collection of files contains the data from which the complete catalogue was generated as well as the program needed to print the catalogue as distributed. It should be noted that the program generates output with special command codes specific to a Diablo Model 1640 or equivalent printer.

2.5 Programing Notes for the Hourly Data File

The hourly data file is quite large (approximately 300,000 records). This size makes searching for specific data through standard sequential access quite slow. To aid in speeding up this process the file has been sorted into a specific order using the following fields as keys. All fields are sorted in ascending order.

1. Site code, including state, county and site codes
2. Parameter code
3. Method code, frequently the same site/parameter used different method codes
4. Date

Once the user has found the site/parameter/method code desired, he may continue reading sequentially until any of the three fields change. At that point, the user can be confident that no more data exist in the file for that site/parameter/method.

At Environmental Monitoring & Services, Inc. (EMSI), the file was organized and accessed through a DEC/RMS file system. Any users that have enough disk space to hold the entire file, use a DEC computer and have access to the RMS file system should consider using RMS. Using RMS, the user may access any site/parameter/method code in a matter of seconds, as opposed to several minutes (sometimes much more). Alternately, other data base management systems may be conveniently used.

3.0 DATA BASE II

Data Base II is a compendium of the following 7 separate data files:

1. Micro-meteorology Data for Edwards Air Force Base, 1980
2. Meteorological Data from the National Weather Service, thru 1980
3. Emissions Inventory for 1979
4. Upper Air Data for Edwards Air Force Base, 1980
5. EPRI Air quality data, Blythe, 1981-82
6. Research Data for China Lake, 1979.
7. Piball Data for Coolwater (SCE), 1979-82

Because of the variety of data types - hourly meteorological, emission inventory, etc - these files are stored in individual formats. The formats are the same as those in which the data were received and, in general, copies of format documentation are included as received. Details of the formats are given in the appendices; details of the contents of the data files are given in the Catalogue printout. The position of the files on the data tape, record length, and blocking information for Data Base II are given in Appendix D.

Appendix A

FILE INFORMATION FOR DATA BASE I

<u>Tape</u>	<u>File</u>	<u>LRECL</u>	<u>Blocking Factor</u>	<u>Total Length</u>	<u>Description</u>
1	1	130	200	26000	Hourly data
1	2	158	150	23700	Daily data
1	3-24	50	200	10000	NPS Visibility Data
1	25	50	200	10000	Army Visibility Data 1
1	26	90	100	9000	Army Visibility Data 2
1	27	80	100	8000	FORTTRAN Prog. - PRTCAT
1	28	80	100	8000	FORTTRAN Prog. - UTMTLL
1	29	80	100	8000	FORTTRAN Prog. - DMPCAT
1	30	80	100	8000	FORTTRAN Prog. - XREF1
1	31	80	100	8000	FORTTRAN Prog. - XREF2
1	32	80	100	8000	FORTTRAN Prog. - XREF3
1	33	80	100	8000	FORTTRAN Prog. - MSORT
1	34	80	100	8000	MACRO-11 Prog. - KOM
1	35	80	100	8000	MACRO-11 Prog. - LOOKUP
1	36	80	100	8000	MACRO-11 Prog. - ASK
1	37	80	100	8000	Catalog Data File
1	38	100	100	10000	Catalog Header File

Appendix B

RECORD INFORMATION FOR DATA BASE I

B.1 Master File Data Format

<u>FIELD NAME</u>	<u>RECORD COLUMN</u>	<u>FORMAT LENGTH</u>	<u>FIELD TYPE AND ACCEPTABLE CODE OR RANGE OF VALUES</u>
1. State Code	01-02	I2	Numeric; 05 - California 03 - Arizona 28 - Nevada
2. Site Number			
a) County Code	03-04	I2	Numeric; 02 - Alpine County 13 - Imperial County 14 - Inyo County 15 - Kern County 26 - Mono County 33 - Riverside County 36 - San Bernardino County 70 - Los Angeles County 99 - Non California
b) Site Code	05-09	I5	Unique numerical code
<p>Note: The site codes are listed in numerical order in Appendix A of the Data Base Catalogue (Volume 5), as well as on each page of the catalogue listings.</p>			
3. Agency	10	A1	Alphanumeric; identifies the type of agency submitting the data. A - ARB F - Federal Govt. Agencies I - Local APCD J - Private K - University L - Military N - Non ARB State Agency

<u>FIELD NAME</u>	<u>RECORD COLUMN</u>	<u>FORMAT LENGTH</u>	<u>FIELD TYPE AND ACCEPTABLE CODE OR RANGE OF VALUES</u>
4. Project	11-12	I2	Numeric; identified the type of project in which data is collected. 11 - Air Monitoring 22 - Special Project or Research; generally includes all private monitoring 31 - QA or parallel monitoring
5. Interval	13	I1	1 = hourly; 2 = alternate hours; 3 = every 3 hours; 8 = 24 hours.
6. Date			Numeric. e.g. Year = 84
a) Year	14-15	I2	Month = 02
b) Month	16-17	I2	Day = 05
c) Day	18-19	I2	
7. Start Hour	20-21	I2	Numeric; value = '00' non 00 meaningless except for TSP for which it is actual start.
8. Pollutant Code	22-26	I5	Numeric; identifies pollutant (parameter) sampled. Complete list included with this document.
9. Method Code	27-28	I2	Numeric; identifies the method of collection and/or method of analysis for a specific pollutant. A complete list included with this document.
10. Units Code	29-30	I2	Numeric; identifies the units in which data values are expressed. A complete list included with this document.

<u>FIELD NAME</u>	<u>RECORD COLUMN</u>	<u>FORMAT LENGTH</u>	<u>FIELD TYPE AND ACCEPTABLE CODE OR RANGE OF VALUES</u>
11. Decimal Code	31	I1	Numeric; indicates how many positions from the right the implied decimal point should be. Values = '0', '1', '2', '3', '4'.
12. Number of Observations	32-33	I2	Numeric; indicates the number of observation fields contained in the record. Always 24 for hourly data and 31 for daily data.
13. Data Field			Numeric; 0000-upper limit. '9999' indicates no data values.
	34-129	24I4	Hourly data
	34-157	31I4	Daily data

* This format description is a modification of the CARB master record format. Mainly, the modification was to reduce the record size. Subroutines to convert the standard format to the modified format are given in Section B.1.1.

B.1.1 Format Conversion Subroutine

The hourly and daily data file formats are modified from the standard format used by CARB. Mainly, the modification reduces the record size by eliminating the status flags for each data field. In practice, these flags were always blank.

The routines to convert the standard format data to the modified format are attached. CARBHR is for hourly data conversion and CARBDY is for daily data. Both routines store all data fields of the CARB data record in an input array, INBUF, and writes only the data field required for the modified data record to an output array, OUTBUF. Both subroutines are intended to be called by a user written main program.

C
C
C
C
C
C
C
C
C
SUBROUTINE CARBDY(INBUF,OUTBUF)

SUBROUTINE TO CONVERT DAILY ARB RECORDS TO DAILY
CDANG RECORDS

VERSION: 1A

BY: T. WILKINSON

DATE: 9-APR-85

BYTE INBUF(190),OUTBUF(157)

INTEGER IX(157)

DATA IX / 3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,
1 21,22,23,24,25,26,27,28,29,30,31,32,33,34,35, 37,38,39,40,
1 42,43,44,45, 47,48,49,50, 52,53,54,55, 57,58,59,60,
1 62,63,64,65, 67,68,69,70, 72,73,74,75, 77,78,79,80,
1 82,83,84,85, 87,88,89,90, 92,93,94,95, 97,98,99,100,
1 102,103,104,105, 107,108,109,110, 112,113,114,115,
1 117,118,119,120, 122,123,124,125, 127,128,129,130,
1 132,133,134,135, 137,138,139,140, 142,143,144,145,
1 147,148,149,150, 152,153,154,155, 157,158,159,160,
1 162,163,164,165, 167,168,169,170, 172,173,174,175,
1 177,178,179,180, 182,183,184,185, 187,188,189,190 /

DO 40 J = 1,157

OUTBUF(J) = INBUF(IX(J))

CONTINUE

RETURN

END

C
C
C
C
C
C
C
C
C
C
SUBROUTINE CARBHR(INBUF, OUTBUF)

SUBROUTINE TO CONVERT HOURLY ARB RECORDS TO HOURLY
CDANG RECORDS

VERSION: 1A

BY: T. WILKINSON

DATE: 9-APR-85

BYTE INBUF(155), OUTBUF(129)

INTEGER IX(129)

DATA IX / 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20,
1 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 37, 38, 39, 40,
1 42, 43, 44, 45, 47, 48, 49, 50, 52, 53, 54, 55, 57, 58, 59, 60,
1 62, 63, 64, 65, 67, 68, 69, 70, 72, 73, 74, 75, 77, 78, 79, 80,
1 82, 83, 84, 85, 87, 88, 89, 90, 92, 93, 94, 95, 97, 98, 99, 100,
1 102, 103, 104, 105, 107, 108, 109, 110, 112, 113, 114, 115,
1 117, 118, 119, 120, 122, 123, 124, 125, 127, 128, 129, 130,
1 132, 133, 134, 135, 137, 138, 139, 140, 142, 143, 144, 145,
1 147, 148, 149, 150, 152, 153, 154, 155 /

DO 40 J = 1, 129

OUTBUF(J) = INBUF(IX(J))

CONTINUE

RETURN

END

B.2 Visibility Data Format

NPS Visibility Data

<u>FIELD NAME</u>	<u>FORMAT</u>	<u>RECORD COLUMN</u>	<u>TYPICAL CODE OR VALUES</u>
<u>RECORD 1</u>			
Year	I2	1-2	
Month	I2	3-4	
Location	I2	5-6	28 - Death Valley 41 - Joshua Tree
Day	I2	7-8	
Line #	I1	9	Counter for 6 records; always 1 for record 1

Met Codes:

Target 1, 0900 hrs LST	I1	10	0 - Total sky cloudless
Target 1, 1200 hrs LST	I1	11	1 - No clouds in sun-target- observer plane
Target 1, 1500 hrs LST	I1	12	2 - Less than 1/3 cloud cover, total sky
Target 2, 0900 hrs LST	I1	13	3 - 1/3 to 2/3 cloud cover, total sky
Target 2, 1200 hrs LST	I1	14	4 - 2/3 to total cloud cover
Target 2, 1500 hrs LST	I1	15	5 - Overcast
Target 3, 0900 hrs LST	I1	16	6 - Raining on site
Target 3, 1200 hrs LST	I1	17	7 - Readings not taken - unrelated to atmospheric conditions
Target 3, 1500 hrs LST	I1	18	8 - Sun in lens, readings not taken
Target 4, 0900 hrs LST	I1	19	
Target 4, 1200 hrs LST	I1	20	
Target 4, 1500 hrs LST	I1	21	
Target 5, 0900 hrs LST	I1	22	
Target 5, 1200 hrs LST	I1	23	
Target 5, 1500 hrs LST	I1	24	

Snow Codes:

Target 1, 0900 hrs LST	I1	26	1 - Target in sun, cloud behind target, snow on target
Target 1, 1200 hrs LST	I1	27	
Target 1, 1500 hrs LST	I1	28	
Target 2, 0900 hrs LST	I1	29	2 - Target in sun, cloud behind target
Target 2, 1200 hrs LST	I1	30	
Target 2, 1500 hrs LST	I1	31	3 - Target in sun, snow on target
Target 3, 0900 hrs LST	I1	32	
Target 3, 1200 hrs LST	I1	33	4 - Target in sun
Target 3, 1500 hrs LST	I1	34	5 - Cloud behind target, snow on target
Target 4, 0900 hrs LST	I1	35	

<u>FIELD NAME</u>	<u>FORMAT</u>	<u>RECORD COLUMN</u>	<u>TYPICAL CODE OR VALUES</u>
Target 4, 1200 hrs LST	I1	36	6 - Cloud behind target
Target 4, 1500 hrs LST	I1	37	7 - Snow on target
Target 5, 0900 hrs LST	I1	38	8 - Target not in sun, no
Target 5, 1200 hrs LST	I1	39	cloud behind target,
Target 5, 1500 hrs LST	I1	40	snow on target
			9 - target obscured by clouds
 <u>RECORDS 2-6</u>			
Year	I2	1-2	
Month	I2	3-4	
Location	I2	5-6	28 - Death Valley 41-Joshua Tree
Day	I2	7-8	
Line #	I1	9	
 UV Contrast Ratios			
- 0900 LST	I3	11-13	The following codes are used for invalid data: -6 - No data, raining, sun in radiometer, or or target obscured by clouds -1 - Target obscured by haze -3 - Contrast Raleigh Minimum of 1-01 -4 - Ratio is 0.99, 1.0 or 1.01, misaligned data -5 - Ratio significantly different from ratios at other wavelengths
- 1200 LST	I3	14-16	
- 1500 LST	I3	17-19	
Repeated for Blue, Green, Red Contrast Ratios			

Army Visibility Data 1

RECORD 1 Same as record 1 for NPS files

RECORDS 2-6

Year	I2	1-2	
Month	I2	3-4	
Location	I2	5-6	28 - Death Valley
Day	I2	7-8	
Line #	I1	9	

Standard Visual Range (SVR) (km)

-at 0900 LST 5I3 for 5 Targets

Records repeated for SVR at 1200 LST and 1500 LST.

Army Visibility Data 2

RECORD 1 Same as record 1 for NPS and Army 1 files

RECORDS 2-6

Year	I2	1-2	
Month	I2	3-4	
Location	I2	5-6	28 - Death Valley
Day	I2	7-8	
Line #	I1	9	

Hourly Standard Visual Range (SVR) (km)

- for Target 1 24I3

Record repeated for targets 2,3,4, and 5.

Appendix C

METHOD, POLLUTANT AND UNIT CODES (DATA BASE I)

C.1 Method and Pollutant Codes

The pollutant name abbreviations are defined in Appendix C of the Data Base Catalogue (Volume 5).

POLLUTANT CODE	NAME	METHOD CODE	METHOD OF COLLECTION	ANALYSIS
11101	TSP	91	HI VOL GLASS FILTER	GRAVIMETRIC
11103	BSO	91		
11201	COH	81	TAPE SAMPLER	TRANSMITTANCE
11202	RUD	91	TAPE SAMPLER	REFLECTANCE
11203	BSCT	11	NEPHELOMETER	REFLECTIVE PHOTOMETRY
12101	AL	92	HI VOL CELLULOSE	
12110	CD	92	HI VOL CELLULOSE	
12128	PB	55	HI VOL CELLULOSE	ATOMIC ABSORPTION
		56	HI VOL GLASS FIBER	X RAY FLUORESCENCE
		92	HI VOL GLASS FIBER	ATOMIC ABSORPTION
12165	SI	55	HI VOL CELLULOSE	
12306	NO3	55	HI VOL GLASS FIBER	BRUCINE COLORIMETRIC
		57	HI VOL GLASS FIBER	MODIFIED SALTZMAN
		58	HI VOL GLASS FIBER	SPECIFIED ION ELECTRODE
		59	HI VOL GLASS FIBER	2,4 XYLENOL
12403	SO4	55	HI VOL GLASS FIBER	METHYLTHYMOL BLUE
		92	HI VOL GLASS FIBER	TURBIDIMETRIC
42101	CO	11	INSTRUMENTAL	NDIR
		12	INSTRUMENTAL	NDIR-LONG PATH
42269	TSUL	16	INSTRUMENTAL	FLAME PHOTOMETRIC
42401	SO2	13	INSTRUMENTAL	CONDUCTIMETRIC
		14	INSTRUMENTAL	COULOMETRIC
		15		
		16	INSTRUMENTAL	FLAME PHOTOMETRIC
		20	INSTRUMENTAL	PULSED FLUOROSCEANCE
		24	INSTRUMENTAL	
42402	H2S	16	INSTRUMENTAL	FLAME PHOTOMETRIC
		71	TAPE SAMPLER	LEAD ACETATE PAPER

POLLUTANT		METHOD CODE	COLLECTION	METHOD OF ANALYSIS
CODE	NAME			
42601	NO	11	INSTRUMENTAL	COLORIMETRIC
		14	INSTRUMENTAL	CHEMILUMINESCENT
		28		
		98	DERIVED	CHEMILUMINESCENT
		99	DERIVED	COLORIMETRIC
42602	NO2	11	INSTRUMENTAL	COLORIMETRIC
		14	INSTRUMENTAL	CHEMILUMINESCENT
		28		
		98	DERIVED	CHEMILUMINESCENT
42603	NOX	11	INSTRUMENTAL	COLORIMETRIC
		14	INSTRUMENTAL	CHEMILUMINESCENT
		28		
		98	DERIVED	CHEMILUMINESCENT
		99	DERIVED	COLORIMETRIC
43101	THC	11	INSTRUMENTAL	FLAME IONIZATION
		14	INSTRUMENTAL	FLAME IONIZATION
43102	NMHC	14	INSTRUMENTAL	FLAME IONIZATION
43201	CH4	11	INSTRUMENTAL	FLAME IONIZATION
		14		
		99		
44101	TOX	14	INSTRUMENTAL	COLORIMETRIC
44201	O3	11	INSTRUMENTAL	CHEMILUMINESCENT
		14	INSTRUMENTAL	UV PHOTOMETRIC
		99		
61101	WS	50	INSTRUMENTAL	ELECTRONIC/ MACHINE AVG
		99		
61102	WD	50	INSTRUMENTAL	ELECTRONIC/ MACHINE AVG
		99		
61103	REWS	20	INSTRUMENTAL	VECTOR SIMULATION
		50		
61104	REWD	20	INSTRUMENTAL	VECTOR SIMULATION
61106	SHWD	20	INSTRUMENTAL	ARITHMETIC STD DEV.
61107	SVWD	20	INSTRUMENTAL	ARITHMETIC STD DEV.
62101	TEMP	40	INSTRUMENTAL	ELECTRONIC/MACHINE AVG
62103	DEW	40	INSTRUMENTAL	ELECTRONIC/MACHINE AVG
62201	RH	11	INSTRUMENTAL	THERMOGRAPH/MACHINE AVG
		20	INSTRUMENTAL	INDIRECT COMUTATION
		40		
63301	INSO	00		
		11	INSTRUMENTAL	PYRANOMETER
64101	PRES	11	INSTRUMENTAL	ANEROID
65102	RAIN	11	BUCKET	CONTINUOUS OR INCREMENTAL
		91	BUCKET	

POLLUTANT		METHOD	METHOD OF	
<u>CODE</u>	<u>NAME</u>	<u>CODE</u>	<u>COLLECTION</u>	<u>ANALYSIS</u>
81101	PM15	51	DICHOTOMOUS	15-2.5 GRAVIMETRIC
		52	DICHOTOMOUS	2.5-0 GRAVIMETRIC
		53	DICHOTOMOUS	TOTAL GRAVIMETRIC
		57	SIZE SELECTIVE HI VOL	TOTAL GRAVIMETRIC
82403	IPSO	92	SIZE SELECTIVE HI VOL	TURBIDIMETRIC
99990	VISI	00		
99996	VTWD	00		
99997	SELE	00		
99998	ELEV	00		
99999	STAB	00		

NOTE: Unknown information is left blank.

C.2 Unit Codes

<u>CODE</u>	<u>UNITS</u>
00	Unknown
01	ug/m3
07	ppm
08	ppb
09	COHS/1K ft
10	RUDS/10K ft
11	m/s
12	m/h
14	deg (comp)
15	deg F
16	millibars
17	deg C
19	percent
21	inches
24	miles
25	lang/min
27	Beta Scat (10^{-4} m^{-1})
29	mm
40	pphm
96	pptm
99	deg(comp)/10

Appendix D

FILE INFORMATION FOR DATA BASE II

<u>Tape</u>	<u>File</u>	<u>LRECL</u>	<u>Blocking Factor</u>	<u>Total Length</u>	<u>Description</u>
1	1	120	40	4800	EAFB - Micromet, Jan 76
1	2	120	40	4800	EAFB - Micromet, Feb 76
1	3	120	40	4800	EAFB - Micromet, Mar 76
1	4	120	40	4800	EAFB - Micromet, Apr 76
1	5	120	40	4800	EAFB - Micromet, May 76
1	6	120	40	4800	EAFB - Micromet, Jun 76
1	7	120	40	4800	EAFB - Micromet, Jul 76
1	8	120	40	4800	EAFB - Micromet, Aug 76
1	9	120	40	4800	EAFB - Micromet, Sep 76
1	10	120	40	4800	EAFB - Micromet, Oct 76
1	11	120	40	4800	EAFB - Micromet, Nov 76 (no Dec)
1	12	120	40	4800	EAFB - Micromet, Jan 77
1	13	120	40	4800	EAFB - Micromet, Feb 77
1	14	120	40	4800	EAFB - Micromet, Mar 77
1	15	120	40	4800	EAFB - Micromet, Apr 77
1	16	120	40	4800	EAFB - Micromet, May 77 (no Jun)
1	17	120	40	4800	EAFB - Micromet, Jul 77
1	18	120	40	4800	EAFB - Micromet, Aug 77
1	19	120	40	4800	EAFB - Micromet, Sep 77
1	20	120	40	4800	EAFB - Micromet, Oct 77
1	21	120	40	4800	EAFB - Micromet, Nov 77
1	22	120	40	4800	EAFB - Micromet, Dec 77
1	23	120	40	4800	EAFB - Micromet, Jan 78
1	24	120	40	4800	EAFB - Micromet, Feb 78
1	25	120	40	4800	EAFB - Micromet, Mar 78
1	26	120	40	4800	EAFB - Micromet, Apr 78
1	27	120	40	4800	EAFB - Micromet, May 78
1	28	120	40	4800	EAFB - Micromet, Jun 78
1	29	120	40	4800	EAFB - Micromet, Jul 78
1	30	120	40	4800	EAFB - Micromet, Aug 78
1	31	120	40	4800	EAFB - Micromet, Sep 78
1	32	120	40	4800	EAFB - Micromet, Oct 78
1	33	120	40	4800	EAFB - Micromet, Nov 78
1	34	120	40	4800	EAFB - Micromet, Dec 78
1	35	120	40	4800	EAFB - Micromet, Jan 79
1	36	120	40	4800	EAFB - Micromet, Feb 79

<u>Tape</u>	<u>File</u>	<u>LRECL</u>	<u>Blocking Factor</u>	<u>Total Length</u>	<u>Description</u>
1	37	120	40	4800	EAFB - Micromet, Mar 79
1	38	120	40	4800	EAFB - Micromet, Apr 79
1	39	120	40	4800	EAFB - Micromet, May 79
1	40	120	40	4800	EAFB - Micromet, Jun 79
1	41	120	40	4800	EAFB - Micromet, Jul 79
1	42	120	40	4800	EAFB - Micromet, Aug 79
1	43	120	40	4800	EAFB - Micromet, Sep 79
1	44	120	40	4800	EAFB - Micromet, Oct 79
1	45	120	40	4800	EAFB - Micromet, Nov 79 (no Dec)
1	46	120	40	4800	EAFB - Micromet, Jan 80
1	47	120	40	4800	EAFB - Micromet, Feb 80
1	48	120	40	4800	EAFB - Micromet, Mar 80
1	49	120	40	4800	EAFB - Micromet, Apr 80
1	50	120	40	4800	EAFB - Micromet, May 80
1	51	120	40	4800	EAFB - Micromet, Jun 80
1	52	120	40	4800	EAFB - Micromet, Jul 80
1	53	120	40	4800	EAFB - Micromet, Aug 80
1	54	120	40	4800	EAFB - Micromet, Sep 80
1	55	120	40	4800	EAFB - Micromet, Oct 80
1	56	120	40	4800	EAFB - Micromet, Nov 80
1	57	120	40	4800	EAFB - Micromet, Dec 80
1	58	120	40	4800	EAFB - Micromet, Feb 81 (no Jan)
1	59	120	40	4800	EAFB - Micromet, Mar 81
1	60	120	40	4800	EAFB - Micromet, Apr 81
1	61	120	40	4800	EAFB - Micromet, May 81
1	62	120	40	4800	EAFB - Micromet, Jun 81
1	63	120	40	4800	EAFB - Micromet, Jul 81
1	64	120	40	4800	EAFB - Micromet, Aug 81
1	65	120	40	4800	EAFB - Micromet, Sep 81
1	66	120	40	4800	EAFB - Micromet, Oct 81
1	67	120	40	4800	EAFB - Micromet, Nov 81
1	68	120	40	4800	EAFB - Micromet, Dec 81
1	69	120	40	4800	EAFB - Micromet, Jan 82
1	70	120	40	4800	EAFB - Micromet, Feb 82
1	71	120	40	4800	EAFB - Micromet, Mar 82
1	72	120	40	4800	EAFB - Micromet, Apr 82
1	73	120	40	4800	EAFB - Micromet, May 82
1	74	120	40	4800	EAFB - Micromet, Jun 82
1	75	120	40	4800	EAFB - Micromet, Jul 82
1	76	120	40	4800	EAFB - Micromet, Aug 82
1	77	120	40	4800	EAFB - Micromet, Sep 82
1	78	120	40	4800	EAFB - Micromet, Oct 82
1	79	120	40	4800	EAFB - Micromet, Nov 82
1	80	120	40	4800	EAFB - Micromet, Dec 82
1	81	120	40	4800	EAFB - Micromet, Jan 83

<u>Tape</u>	<u>File</u>	<u>LRECL</u>	<u>Blocking Factor</u>	<u>Total Length</u>	<u>Description</u>
1	82	120	40	4800	EAFB - Micromet, Feb 83
1	83	120	40	4800	EAFB - Micromet, Mar 83
1	84	120	40	4800	EAFB - Micromet, Apr 83
1	85	120	40	4800	EAFB - Micromet, May 83
1	86	120	40	4800	EAFB - Micromet, Jun 83
1	87	120	40	4800	EAFB - Micromet, Jul 83
1	88	120	40	4800	EAFB - Micromet, Aug 83
1	89	120	40	4800	EAFB - Micromet, Sep 83
1	90	120	40	4800	EAFB - Micromet, Oct 83
1	91	120	40	4800	EAFB - Micromet, Nov 83
1	92	120	40	4800	EAFB - Micromet, Dec 83
1	93	120	40	4800	EAFB - Micromet, Jan 84
1	94	120	40	4800	EAFB - Micromet, Feb 84
1	95	120	40	4800	EAFB - Micromet, Mar 84
1	96	120	40	4800	EAFB - Micromet, Apr 84
2	1	495	38	18810	NWS - Blank File
2	2	495	38	18810	NWS - Bishop (1948-77)
2	3	495	38	18810	NWS - Bishop (1978-80) China Lake (1978-80) Blythe (1978-80)
2	4	495	38	18810	NWS - Blythe/Riverside (1948-54)
3	1	495	38	18810	NWS - Blank File
3	2	495	38	18810	NWS - China Lake (1945-77)
3	3	495	38	18810	NWS - Cuddleback (1963-70)
4	1	495	38	18810	NWS - Blank File
4	2	495	38	18810	NWS - Edwards AFB (1949-70)
4	3	495	38	18810	NWS - George(Victorville) (1950-70)
4	4	495	38	18810	NWS - Needles/Municipal (1948-64)
5	1	495	38	18810	NWS - Blank File
5	2	495	38	18810	NWS - Silverlake (1948-50)
5	3	495	38	18810	NWS - Thermal (1950-54) NWS - Mojave (1955-58)
6	1	1252	5	6260	CARB - Desert emissions
6	2	80	100	8000	EAFB - Upper Air - Oct 5 - A
6	3	80	100	8000	EAFB - Upper Air - Oct 5 - B
6	4	80	100	8000	EAFB - Upper Air - Oct 6 - A
6	5	80	100	8000	EAFB - Upper Air - Oct 6 - B
6	6	80	100	8000	EAFB - Upper Air - Oct 7 - A
6	7	80	100	8000	EAFB - Upper Air - Oct 7 - B
6	8	80	100	8000	EAFB - Upper Air - Oct 11 - A
6	9	80	100	8000	EAFB - Upper Air - Oct 11 - B

<u>Tape</u>	<u>File</u>	<u>LRECL</u>	<u>Blocking Factor</u>	<u>Total Length</u>	<u>Description</u>
6	10	80	100	8000	EAFB - Upper Air - Oct 12 - A
6	11	80	100	8000	EAFB - Upper Air - Oct 12 - B
6	12	80	100	8000	EAFB - Upper Air - Oct 13 - A
6	13	80	100	8000	EAFB - Upper Air - Oct 13 - B
6	14	80	100	8000	EAFB - Upper Air - Oct 14 - A
6	15	80	100	8000	EAFB - Upper Air - Oct 14 - B
6	16	80	100	8000	EAFB - Upper Air - Oct 15 - A
6	17	80	100	8000	EAFB - Upper Air - Oct 15 - B
6	18	80	100	8000	EAFB - Upper Air - Oct 17 - A
6	19	80	100	8000	EAFB - Upper Air - Oct 17 - B
6	20	80	100	8000	EAFB - Upper Air - Oct 18 - A
6	21	80	100	8000	EAFB - Upper Air - Oct 18 - B
6	22	80	100	8000	EAFB - Upper Air - Oct 19 - A
6	23	80	100	8000	EAFB - Upper Air - Oct 19 - B
6	24	80	100	8000	EAFB - Upper Air - Oct 20 - A
6	25	80	100	8000	EAFB - Upper Air - Oct 20 - B
6	26	80	100	8000	EAFB - Upper Air - Oct 22 - A
6	27	80	100	8000	EAFB - Upper Air - Oct 22 - B
6	28	80	100	8000	EAFB - Upper Air - Oct 24 - A
6	29	80	100	8000	EAFB - Upper Air - Oct 24 - B
6	30	80	100	8000	EAFB - Upper Air - Oct 25 - A
6	31	80	100	8000	EAFB - Upper Air - Oct 25 - B
6	32	80	100	8000	EAFB - Upper Air - Oct 26 - A
6	33	80	100	8000	EAFB - Upper Air - Oct 26 - B
6	34	80	100	8000	EAFB - Upper Air - Oct 26 - C
6	35	80	100	8000	EAFB - Upper Air - Oct 26 - D
6	36	80	100	8000	EAFB - Upper Air - Oct 27 - A
6	37	80	100	8000	EAFB - Upper Air - Oct 27 - B
6	38	80	100	8000	EAFB - Upper Air - Oct 28 - A
6	39	80	100	8000	EAFB - Upper Air - Oct 28 - B
6	40	80	100	8000	EAFB - Upper Air - Oct 31 - A
6	41	80	100	8000	EAFB - Upper Air - Oct 31 - B
6	42	80	100	8000	EAFB - Upper Air - Oct 31 - C
6	43	80	100	8000	EAFB - Upper Air - Oct 31 - D
6	44	80	100	8000	EPRI - AQ Data - File 1
6	45	80	100	8000	EPRI - AQ Data - File 2
6	46	80	100	8000	EPRI - AQ Data - File 3
6	47	80	100	8000	EPRI - AQ Data - File 4
6	48	80	100	8000	EPRI - AQ Data - File 5
6	49	80	100	8000	EPRI - AQ Data - File 6
6	50	80	100	8000	EPRI - AQ Data - File 7
6	51	80	100	8000	EPRI - AQ Data - File 8
6	52	80	100	8000	EPRI - AQ Data - File 9
6	53	80	100	8000	EPRI - AQ Data - File 10
6	54	80	100	8000	EPRI - AQ Data - File 11

<u>Tape</u>	<u>File</u>	<u>LRECL</u>	<u>Blocking Factor</u>	<u>Total Length</u>	<u>Description</u>
6	55	80	100	8000	EPRI - AQ Data - File 12
6	56	80	100	8000	EPRI - AQ Data - File 13
6	57	80	100	8000	EPRI - AQ Data - File 14
6	58	80	100	8000	EPRI - AQ Data - File 15
6	59	80	100	8000	EPRI - AQ Data - File 16
6	60	80	100	8000	EPRI - AQ Data - File 17
6	61	80	100	8000	EPRI - AQ Data - File 18
6	62	80	100	8000	EPRI - AQ Data - File 19
6	63	80	100	8000	EPRI - AQ Data - File 20
6	64	80	100	8000	SCE - Pibal Data - Coolwater
6	65	80	100	8000	SCE - Pibal Data - Lucerne
6	66	80	100	8000	China Lake Research Data

Appendix E

MICRO-METEOROLOGY DATA FORMAT, EDWARDS AIR FORCE BASE, 1980

Format information for these data is not available. They may be obtained from EAFB, Lt.Tongue (805) 277 4507

Appendix F

METEOROLOGICAL DATA FORMAT, NATIONAL WEATHER SERVICE, THRU 1980

Complete file information from NWS is duplicated here. Details of the sites included are given in the printed catalogue. This data was obtained via Southern California Edison.

TAPE DECK		PAGE NO.
1440	AIRWAYS SURFACE OBSERVATIONS	1

INTRODUCTION

SOURCE

Weather observations, in support of aircraft operations, have been taken at airports since the earliest days of aviation. The rapid growth of the industry during the 1940's made it evident that some mechanical means of summarizing the data must be developed. How was a site to be selected or an airport designed without adequate statistical information on which to base decisions? The first efforts toward this end caused the WBAN No. 1 card to come into being. For archiving purposes these observations, mostly from military stations, were designated as Card Deck-141. The period of record is generally 1941-1944. A change of format necessitated a new card deck designation (Card Deck-142) to be instituted in 1945. This deck remained in force into 1948. During 1948 additional major changes were made in observing and recording practises. These led to the development of Card Deck-144. Although the usual beginning data of digital information in this form is June 1948 the changeover was made station by station on varying dates. Then too, some stations have had observations back-punched in this format to much earlier dates.

In the early 1960's the FAA undertook a major airport study. To facilitate the handling of large masses of data necessary for this effort the Climatological Services of the Weather Bureau, Air Force and Navy along with the FAA devised the tape format described in this manual. This format was called Tape Data Family-14 (TDF-14) to retain some continuity with the card decks. Within this family of similar observations there are several Tape Decks - each one uniquely identified at the beginning of each physical record on tape.

Beginning January 1, 1965, for most National Weather Service stations and March 1, 1972, for most Naval Weather Service stations the digitizing of the Airways Observations was reduced from 24 obs/day to 8 obs/day. These observations, at 3-hourly intervals, coincide with the normal GMT schedule of 00Z, 03Z, 06Z etc. This means, of course, that the observations, keyed in Local Standard Time (LST) differ according to time zone.

TAPE DECK		PAGE NO.
1440	AIRWAYS SURFACE OBSERVATIONS	11

QUALITY CONTROL AND CONVERSIONS

All observations have been subjected to some form of quality control. During the earlier years this was almost entirely a manual effort. As more sophisticated techniques of processing were introduced the quality control procedures were also improved. Today, the quality control effort is a blend of several computer programs and manual review. Observations are checked for conformance to established observing and coding practises, for internal consistency, for serial, or time oriented consistency, and against defined limits for various meteorological parameters.

The archiving of long term climatological information presents an almost constant dilemma to the archivist, systems analyst and programmer. Refinements of observational instruments, new techniques, changes in user needs and other factors combine to keep the incoming data in an almost perpetual state of change. In some instances the changes are of such significance that individual fields in the tape format must be redefined and the ultimate user must adapt this new information to his needs.

At other times the changes may be of such a nature that they can be incorporated into the existing format by converting units or other measurements. For example, wind speeds were recorded and punched in miles per hour through 1955 and in knots thereafter. All wind speeds on the tape file are in knots, the earlier period having been converted from mph.

USE OF THE MANUAL

This manual was designed so that recourse to additional reference material should be unnecessary. Occasionally, however, the researcher may wish to obtain a copy of the original Card Deck reference manual. This may be done by writing to the Director, National Climatic Center, Federal Building, Asheville, NC 28801.

Care should be taken to read carefully the general tape notations and coding practises.

TAPE DECK		PAGE NO.
1440	AIRWAYS SURFACE OBSERVATIONS	111

MANUAL AND TAPE NOTATIONS

FORMAT

Each physical tape record contains six observations and is 495 bytes long.* These records consist of 15 bytes of identification followed by six logical records of 80 bytes each. Records always begin with the Local Standard Time hour of 00LST, 06LST, 12LST or 18LST. Thus, four physical records are needed to contain each day's observations.

Space is always retained on tape for 24 obs/day. When no observation is available the hour is indicated (2 bytes) and all other fields are coded blank. Care in programming should be taken to allow for this condition, particularly with most tapes from 1965 onward.

The manual presents a graphical representation of the standard format indicating Tape Fields, Tape Positions and Element Definition followed by detailed information for each field.

Also included as part of the manual is a simple FORTRAN program that may be used to overcome the problems of alphanumeric characters.

MANUAL AND TAPE

The following notations are used throughout the manual:

x = any numeric or alphanumeric character

i = same as x but used to show that the character is an indicator rather than part of the recorded element

- = an "11" or zone punch

+ = a "12" punch

both the - and the + may appear by themselves or in combination with a numeric digit to indicate an overpunch or signed field

Δ = blank

* = an 11,8,4 punch

- * Currently, archive tapes are 9 track, 1600 bpi, blocked four (495x4=1980 bytes) and can be furnished with this blocking factor if requested. The advantage is that the entire period of record for one station can be provided on one reel of tape.

TAPE DECK		PAGE NO.
1440	AIRWAYS SURFACE OBSERVATIONS	iv

SPECIAL NOTE

The observations described in this manual are those from Card Deck-144. The Tape Deck number is 1440. Elements for certain fields may differ in other Decks within this Tape Data Family. Requesters of data other than TD-1440 will be furnished appropriate reference material.

Oct 1975

TAPE DECK		PAGE NO.
1440	AIRWAYS SURFACE OBSERVATIONS	v

CHARACTER SET TDF-14

	<u>HEXADECIMAL</u>	<u>OCTAL</u>	<u>EQUIVILANT CARD PUNCH COMBINATION</u>
1	F1	01	1
2	F2	02	2
3	F3	03	3
4	F4	04	4
5	F5	05	5
6	F6	06	6
7	F7	07	7
8	F8	10	8
9	F9	11	9
0	F0	12	0
Δ(blank)	40	20	blank
-	60	40	11
*	5C	54	11,8,4
&	50	60	12
A	C1	61	12,1
B	C2	62	12,2
C	C3	63	12,3
D	C4	64	12,4
E	C5	65	12,5
F	C6	66	12,6
G	C7	67	12,7
H	C8	70	12,8
I	C9	71	12,9
J	D1	41	11,1
K	D2	42	11,2
L	D3	43	11,3
M	D4	44	11,4
N	D5	45	11,5
O	D6	46	11,6
P	D7	47	11,7
Q	D8	50	11,8
R	D9	51	11,9
	C0	72	12,0
	D0	52	11,0
	E0	32	0,2,8 (record mark)

TAPE DECK		PAGE NO.
1440	AIRWAYS SURFACE OBSERVATIONS	vi

FORTRAN SUBROUTINE FOR SIGNED FIELDS

SUBROUTINE SIGNCK (IFLD,ISGN)

C THIS SUBROUTINE WILL TEST ANY WIND SPEED OR PSYCHROMETRIC WITH A SIGN OVER UNITS POSITION
C READ AS A1, AND THE HIGH ORDER POSITIONS READ AS AN I SPEC OF PROPER WIDTH.
C THE SIGN SHOULD ENTER THE PARAMETER LIST AS ISGN, THE REMAINING PORTION AS
C IFLD. UPON RETURN FROM THIS ROUTINE, THE VALUE OF THE FIELD WILL BE AN INTEGER
C WITH PROPER SIGN. IT WILL BE THE USER RESPONSIBILITY TO CONVERT THIS TO REAL
C FORM WITH PROPER DECIMAL ALIGNMENT. INVALID CONDITION CAUSES IFLD TO BE
C SET TO 9999.

```

DIMENSION IP(10),MIN(10),NUM(10)
DATA IP/'A','B','C','D','E','F','G','H','I','O'/
DATA MIN/'J','K','L','M','N','O','P','Q','R','O'/
DATA NUM/1,2,3,4,5,6,7,8,9,0/,LAST/'*'/

```

```

IF (ISGN.EQ.LAST) GO TO 16
DO 14 K=1,10
IF (ISGN.EQ.IP(K)) GO TO 20
IF (ISGN.EQ.MIN(K)) GO TO 22
14 CONTINUE
16 IFLD= 9999
RETURN
20 IFLD= IFLD*10 + NUM(K)
RETURN
22 IFLD= -(IFLD*10 + NUM(K))
RETURN
END

```


TAPE DECK		PAGE NO.
1440	AIRWAYS SURFACE OBSERVATIONS	vii

TAPE DECKS WITHIN TDF-14

<u>TAPE DECK</u>	<u>NAME OF CARD DECK</u>
1400	USWB Form 1130-Aero Hourly Surface Observations
1410	USAF Form 94-A Hourly Surface Observations
1411	Hourly Ceiling-Visibility Observations (Card 1)
1412	Canadian Hourly Surface Observations (Type 141)
1420	WBAN Hourly Surface Observations, 1945-1948
1422	Canadian Hourly Surface Observations (Type 142)
1440	WBAN Hourly Surface Observations, 1945-
1441	Hourly Ceiling-Visibility Observations (Card 2)
1442	Canadian Hourly Surface Observations (Type 144)
1443	Canadian Hourly Surface Observations, 1950-
1445	Metar Observations
1480	Turkish Hourly Observations
1481	British Hourly Observations
1482	Azores Hourly Observations
1483	Korean Hourly Observations (ROK)
1484	Taichung Hourly Observations
1485	German Hourly Observations (GZMO)
1486	Chinese & Formosan Hourly Observations

TAPE DECK	AIRWAYS SURFACE OBSERVATIONS	PAGE NO.
1440		1

TAPE DECK	STN NUMB	YR	MO	DY	HR	CEIL	VIS	WIND		DRY BLB	WET BLB	DEW PT	REL HUM	S.L. PRESS	STA PRES	SKY COND
								DR	SPD							
14XX	XXXXXX	XX	XX	XX	XX	XXXX	XXXX	XX	XXX	XXX	XXX	XXX	XXXX	XXXX	XXXX	XXXX

FIELD NUMBER	001	002	003	004	005	101	102	103	104	105	106	107	108	109	110	111	112
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T O P T Q	CLOUDS																WEATHER																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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FIELD NUMBER	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	201	202	629	630	631	632	633	634	635	636	637	638	639
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TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT
001	001 - 004	TAPE DECK NUMBER
002	005 - 009	STATION NUMBER
003	010 - 011	YEAR
004	012 - 013	MONTH
005	014 - 015	DAY
101	016 - 017	HOUR
102	018 - 021	CEILING HEIGHT AND INDICATOR
103	022 - 025	HORIZONTAL VISIBILITY AND INDICATOR
104	026 - 027	WIND DIRECTION - 16 POINTS
105	028 - 030	WIND SPEED
106	031 - 033	DRY BULB (AIR) TEMPERATURE
107	034 - 036	WET BULB TEMPERATURE
108	037 - 039	DEW POINT TEMPERATURE
109	040 - 043	RELATIVE HUMIDITY AND INDICATOR
110	044 - 048	SEA LEVEL PRESSURE
111	049 - 052	STATION PRESSURE
112	053 - 057	SKY CONDITION AND INDICATOR
113	058	TOTAL SKY COVER
114	059	TOTAL OPAQUE SKY COVER
115	060	AMOUNT OF LOWEST CLOUD LAYER
116	061	TYPE OF LOWEST CLOUD OR OBSCURING PHENOMENA
117	062 - 064	HEIGHT OF BASE OF LOWEST CLOUD LAYER OR OBSCURING PHENOMENA
118	065	AMOUNT OF SECOND CLOUD LAYER
119	066	TYPE OF CLOUD - SECOND LAYER
120	067 - 069	HEIGHT OF BASE OF SECOND CLOUD LAYER
121	070	SUMMATION AMOUNT OF FIRST TWO CLOUD LAYERS
122	071	AMOUNT OF THIRD CLOUD LAYER
123	072	TYPE OF CLOUD - THIRD LAYER
124	073 - 075	HEIGHT OF BASE OF THIRD CLOUD LAYER
125	076	SUMMATION AMOUNT OF FIRST THREE CLOUD LAYERS
126	077	AMOUNT OF FOURTH CLOUD LAYER
127	078	TYPE OF CLOUD - FOURTH LAYER
128	079 - 081	HEIGHT OF BASE OF FOURTH CLOUD LAYER
129	082	OCCURRENCE OF THUNDERSTORM, TORNADO OR SQUALL
130	083	OCCURRENCE OF RAIN, RAIN SHOWERS OR FREEZING RAIN
131	084	OCCURRENCE OF RAIN SQUALLS, DRIZZLE OR FREEZING DRIZZLE
132	085	OCCURRENCE OF SNOW, SNOW PELLETS OR ICE CRYSTALS
133	086	OCCURRENCE OF SNOW SHOWERS, SNOW SQUALLS OR SNOW GRAINS
134	087	OCCURRENCE OF SLEET, SLEET SHOWERS OR HAIL
135	088	OCCURRENCE OF FOG, BLOWING DUST, OR BLOWING SAND

Oct 1975

TAPE DECK		AIRWAYS SURFACE OBSERVATIONS		PAGE NO.
1440				2
<u>TAPE FIELD NUMBER</u>	<u>TAPE POSITIONS</u>	<u>ELEMENT</u>		
136	089	OCCURRENCE OF SMOKE, HAZE, SMOKE AND HAZE, DUST, BLOWING SNOW, BLOWING SPRAY		
137	090 - 091	WIND DIRECTION - 36 POINTS		
138	092 - 094	BLANK		
139	095	RECORD MARK		
201 - 239	096 - 175	SECOND OBSERVATION)		
301 - 339	176 - 255	THIRD OBSERVATION)		
401 - 439	256 - 335	FOURTH OBSERVATION)		
501 - 539	336 - 415	FIFTH OBSERVATION)		
601 - 639	416 - 495	SIXTH OBSERVATION)		
			THESE OBSERVATIONS FOLLOW THE SAME FORMAT AS FIELDS 101-139 (TAPE POSITIONS 016-095).	

Oct 1975

TAPE DECK		AIRWAYS SURFACE OBSERVATIONS			PAGE NO.
1440					3
TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT	TAPE CONFIGURATION	CODE DEFINITIONS AND REMARKS	
001	001 - 004	TAPE DECK NUMBER	1400 - 1499	Used to distinguish different data sources. See current list at beginning of manual.	
002	005 - 009	STATION NUMBER	01001 - 98999	Unique number used to identify each station. Usually a WBAN number but occasionally a WMO number.	
003	010 - 011	YEAR	00 - 99	Year of observation. 00-99 = 1900-1999	
004	012 - 013	MONTH	01 - 12	Month of observation. 01-12 = Jan. - Dec.	
005	014 - 015	DAY	01 - 31	Day of month.	
101	016 - 017	HOURL	00 - 23	Hour of observation in local standard time. 00-23 = 0000-2300 LST	
1021	018	CEILING HEIGHT INDICATOR	1,2,3,- &,Δ,A	These codes indicate various schemes used to convert ceiling heights to hundreds of feet or to indicate special conditions of little or no meaning to the general user.	
102	019 - 021	CEILING HEIGHT	000 - 800 888, 999 ΔΔΔ, ΔΔ*	Ceiling in hundreds of feet. Ceiling is defined as sky cover of .6 or greater. 000-800 = 00000-80,000 feet 888 = Ceiling of cirroform clouds at unknown height. Used for the period Sep. 1956-March 1970. 999 = Unlimited ceiling ΔΔΔ = Unknown ΔΔ* = Original value invalid	
1031	022	VISIBILITY INDICATOR	0 - 5 M, Δ	These codes indicate various schemes used to convert visibilities into statute miles and have little or no meaning to the general user.	

Oct 1975

TAPE DECK		AIRWAYS SURFACE OBSERVATIONS		PAGE NO.
1440				4
TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT	TAPE CONFIGURATION	CODE DEFINITIONS AND REMARKS
103	023 - 025	HORIZONTAL VISIBILITY	000-990 999 (Not all values used) ΔΔΔ ΔΔ*	Prevailing horizontal visibility (usually at an elevation of 6 feet above the ground) in statute miles. 000 = Zero visibility 001 = 1/16 Statute miles 002 = 1/8 " 003 = 3/16 " 004 = 1/4 " 005 = 5/16 " 006 = 3/8 " 007 = 1/2 " 008 = 5/8 " 009 = 3/4-7/8 " 010 = 1 " 012 = 1 1/8 " 014 = 1 1/4 " 016 = 1 3/8 " 017 = 1 1/2 " 018 = 1 5/8 " 019 = 1 3/4 " 020 = 2 " 024 = 2 1/4 " 027 = 2 1/2 " 030-150 = 3-15 miles in increments of one mile 200-950 = 20-95 miles in increments of five miles 990 = 100 miles or greater 999 = Unlimited ΔΔΔ = Unknown ΔΔ* = Original value invalid
104	026 - 027	WIND DIRECTION - 16 POINTS	00-88 ΔΔ, Δ*	Direction from which the wind is blowing in special 16 point WBAN code. 11 = North 349°-011° 12 = North-Northeast 012°-033° 22 = Northeast 034°-056° 32 = East-Northeast 057°-078° 33 = East 079°-101° 34 = East-Southeast 102°-123° 44 = Southeast 124°-146° 54 = South-Southeast 147°-168° 55 = South 169°-191° 56 = South-Southwest 192°-213° 66 = Southwest 214°-236° 76 = West-Southwest 237°-258° 77 = West 259°-281° 78 = West-Northwest 282°-303° 88 = Northwest 304°-326° 18 = North-Northwest 327°-348° 00 = Calm ΔΔ = Unknown Δ* = Original value invalid Note: Beginning Jan 1, 1964 wind directions were observed and coded to tens of degrees (see field 137). These values were converted to the 16 point code.

Oct 1975

TAPE DECK		AIRWAYS SURFACE OBSERVATIONS			PAGE NO.
1440					5
TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT	TAPE CONFIGURATION	CODE DEFINITIONS AND REMARKS	
105	028 - 030	WIND SPEED	000 - 199 ΔΔΔ, ΔΔ*	Wind speed in whole knots. ΔΔΔ = Unknown ΔΔ* = Original value invalid Note: When this field is numeric it is <u>always</u> signed positive (12 over punch).	
106	031 - 033	DRY BULB (AIR) TEMPERATURE	001̄ - 130̄	Specified temperature in whole degrees fahrenheit. 001̄ - 130̄ = -1° - -130°F 000̄ - 140̄ = 0° - +140°F ΔΔΔ = Unknown ΔΔ* = Original value invalid Note: When these fields are numeric they are always signed to indicate negative (11 overpunch) or positive (12 overpunch) temperatures	
107	034 - 036	WET BULB TEMPERATURE	000̄ - 140̄		
108	037 - 039	DEW POINT TEMPERATURE	ΔΔΔ - ΔΔ*		
1091	040	RELATIVE HUMIDITY INDICATOR	Δ, Δ	Δ = Used to denote that dew point temperatures and relative humidities were originally coded with respect to ice when temperature was below 32°F but were recomputed with respect to water. Δ = No special conversions made.	
109	041 - 043	RELATIVE HUMIDITY	001 - 100 ΔΔΔ, ΔΔ*	Relative humidity in whole percent. ΔΔΔ = Unknown ΔΔ* = Original value invalid.	
110	044 - 048	SEA LEVEL PRESSURE	09000 - 10999 ΔΔΔΔΔ, ΔΔΔΔ*	Pressure, reduced to sea level, in millibars and tenths. 09000-10999 = 900.0 - 1099.9 mb ΔΔΔΔΔ = Unknown ΔΔΔΔ* = Original value invalid.	
111	049 - 052	STATION PRESSURE	1900 - 3999 ΔΔΔΔ, ΔΔΔ*	Pressure at station level in inches and hundredths of Hg. 1900-3999 = 19.00 - 39.99 in Hg. ΔΔΔΔ = Unknown ΔΔΔ* = Original value invalid.	

Oct 1975

TAPE DECK		AIRWAYS SURFACE OBSERVATIONS		PAGE NO.
1440				6
TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT	TAPE CONFIGURATION	CODE DEFINITIONS AND REMARKS
1121	053	SKY CONDITION INDICATOR	-, Δ	<p>Indicator of method of recording sky condition or other phenomena.</p> <p>- = Sky condition - U.S. stations prior to June 1951. Δ = Sky conditions - U.S. stations June 1951 and later.</p> <p>Note: Some other decks have various configurations in this position denoting deviation from standard coding. Detailed information will be supplied when applicable.</p>
112	054 - 057	SKY CONDITION		<p>A descriptive symbolic coding of the state of the sky, referring in general to the amount of the celestial dome covered by clouds or obscuring phenomena. There was a major change in the method of recording this field in June 1951.</p> <p>When used to describe the amount of sky cover alphanumeric characters in this field have the following meaning:</p> <p>0 = Clear or less than .1 cover 1 = Thin scattered clouds .1 - .5 2 = Scattered clouds .1 - .5 3 = Dark scattered clouds .1 - .5 4 = Thin broken clouds .6 - .9 5 = Broken clouds .6 - .9 6 = Dark broken clouds .6 - .9 7 = Thin overcast clouds 1.0 8 = Overcast clouds 1.0 9 = Dark overcast clouds 1.0 - = Obscuration Δ = Partial obscuration</p> <p><u>PRIOR TO JUNE 1951</u></p> <p>During this period when scattered clouds were reported the two middle figures of the field represent the height, in hundreds of feet, of the lowest layer of scattered clouds.</p> <p>During this period only two layers were recorded in this field. The first digit always represents the higher layer and the last digit the lowest layer.</p> <p>The codes on page 7 describe the Sky Condition configurations that appear on tape prior to June 1951. Tape configurations for the period July 1951 onward are explained on page 8.</p>

Oct 1975

TAPE DECK		PAGE NO.
1440	AIRWAYS SURFACE OBSERVATIONS	7

TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT	TAPE CONFIGURATION	CODE DEFINITIONS AND REMARKS
112	054 - 057	SKY CONDITION		<p> 0--- = Obscuration occurring alone 0--0 = Clear or less than .1 cover 0--Δ = Thin obscuration reported alone 0--4 to 0--9 = One layer of broken or overcast clouds reported 4--- to 9--- = Obscuration with higher layer of broken or overcast clouds 4--Δ to 9--Δ = Thin obscuration with higher layer of broken or overcast clouds Δ--4 to Δ--9 = Layer of broken or overcast clouds with thin obscuration above 4--4 to 9--9 = Two layers of broken or overcast clouds --- = Two layers of obscuration phenomena ---Δ = Thin obscuration with obscuration above Δ--- = Obscuration with thin obscuration above Δ--Δ = Thin obscuration with thin obscuration above ---4 to ---9 = Layer of broken or overcast clouds with obscuration above 0001 to 0993 = Layer of scattered clouds 1001 to 9993 = Layer of scattered clouds with scattered, broken or overcast layer above -001 to -993 = Layer of scattered clouds with obscuration above Δ001 to Δ993 = Layer of scattered clouds with thin obscuration above **** = Original value invalid ΔΔΔΔ = Unknown </p> <p>For the two middle digits:</p> <p> 00 - 98 = Height of the lowest scattered layer in hundreds of feet 99 = 10,000 feet or greater -- = No low scattered clouds ΔΔ = Unknown *Δ, Δ*, ** = Original value invalid </p>

TAPE DECK		AIRWAYS SURFACE OBSERVATIONS			PAGE NO.
1440					8
TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT	TAPE CONFIGURATION	CODE DEFINITIONS AND REMARKS	
112	054 - 057	SKY CONDITION	0000 - 9999 **** AAAA	<p>Beginning June 1951 sky condition was reported and coded by layer in <u>ascending</u> order. This allows four layers to be described because heights of scattered clouds are no longer entered. Individual sky condition characters have the same meaning (0-9, Δ, -) as those described on page 6. If less than four layers are present the remaining positions are coded 0.</p> <p>Example: 2580 = Three layers of clouds - lower scattered, broken layer and higher overcast</p> <p>AAAA = Unknown **** = Original value invalid</p>	
113	058	TOTAL SKY COVER	0 - 9	<p>Amount of the celestial dome covered by clouds or obscuring phenomena. Opaque means clouds or obscuration through which the sky or higher cloud layers cannot be seen.</p> <p>0 = Clear or less than .1 1-5 = .1 to .5 covered (scattered) 6-9 = .6 to .9 covered (broken) - = > .9 covered (overcast) Δ = Unknown</p> <p>Note: When cloud amount for individual layers is less than one tenth, the height field may appear as the actual height of the fragment or as an invalid (ΔΔ*) configuration.</p>	
114	059	TOTAL OPAQUE SKY COVER	-, Δ		
115	060	AMOUNT OF LOWEST CLOUD LAYER			
118	065	AMOUNT OF SECOND CLOUD LAYER			
122	071	AMOUNT OF THIRD CLOUD LAYER			
126	077	AMOUNT OF FOURTH CLOUD LAYER			
116	061	TYPE OF LOWEST CLOUD OR OBSCURING PHENOMENA	0-9, - K,M,N,O P,R,Δ	<p>Generic cloud type or obscuring phenomena.</p> <p>0 = None 1 = Fog 2 = Stratus 3 = Stratocumulus 4 = Cumulus 5 = Cumulonimbus 6 = Altostratus 7 = Altcumulus 8 = Cirrus 9 = Cirrostratus K = Stratus Fractus M = Cumulus Fractus N = Cumulonimbus Mamma O = Nimbostratus P = Altcumulus Castellanus R = Cirrocumulus - = Obscuring phenomena other than fog Δ = Unknown</p>	
119	066	TYPE OF CLOUD-SECOND LAYER			
123	072	TYPE OF CLOUD-THIRD LAYER			
127	078	TYPE OF CLOUD-FOURTH LAYER			

Oct 1975

TAPE DECK		AIRWAYS SURFACE OBSERVATIONS			PAGE NO.
1440					9
TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT	TAPE CONFIGURATION	CODE DEFINITIONS AND REMARKS	
117	062 - 064	HEIGHT OF BASE OF LOWEST CLOUD LAYER OR OBSCURING PHENOMENA	000 - 800 --- ΔΔΔ	Height of base of clouds or obscuring phenomena in hundreds of feet.	
120	067 - 069	HEIGHT OF BASE OF SECOND CLOUD LAYER	ΔΔ*		
124	073 - 075	HEIGHT OF BASE OF THIRD CLOUD LAYER	888	000-800 = 0 - 80,000 feet 888 = Cirroform clouds of unknown height	
128	079 - 081	HEIGHT OF BASE OF FOURTH CLOUD LAYER		--- = Partial obscuration when field 116 coded - or 1. Otherwise indicates none or no clouds for which height could be reported.	
				ΔΔΔ = Unknown	
				ΔΔ* = Original value invalid	
121	070	SUMMATION AMOUNT OF FIRST TWO CLOUD LAYERS	0 - 9 -, Δ	Total amount of sky covered by the indicated layers.	
125	076	SUMMATION AMOUNT OF FIRST THREE CLOUD LAYERS		0 = Clear or less than .1 1-9 = .1 to .9 covered - = > .9 covered Δ = Unknown	
129	082	OCCURRENCE OF THUNDERSTORM, TORNADO OR SQUALL	0 - 6 Δ *	0 = None 1 = Thunderstorm - lightning and thunder. Wind gusts less than 50 knots, and hail, if any, less than 3/4 inch diameter. 2 = Heavy or severe thunderstorm - frequent intense lightning and thunder. Wind gusts 50 knots or greater and hail, if any, 3/4 inch or greater diameter. 3 = Report of tornado or waterspout. 4 = Light squall (through 5/51 only) 5 = Moderate squall 6 = Heavy squall (through 5/51 only)	
				Note: Beginning June 1951 only moderate squall is recorded Squall is sudden increase of wind speed by at least 16 knots, reaching 22 knots or more and lasting for at least one minute.	
				Δ = Unknown	
				* = Original value invalid	
130	083	OCCURRENCE OF RAIN, RAIN SHOWERS OR FREEZING RAIN	0 - 9 Δ *	0 = None 1 = Light rain 2 = Moderate rain 3 = Heavy rain 4 = Light rain showers 5 = Moderate rain showers 6 = Heavy rain showers 7 = Light freezing rain 8 = Moderate freezing rain 9 = Heavy freezing rain Δ = Unknown * = original value invalid	

Oct 1975

TAPE DECK		AIRWAYS SURFACE OBSERVATIONS		PAGE NO.
1440				10
TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT	TAPE CONFIGURATION	CODE DEFINITIONS AND REMARKS
130	083	OCCURRENCE OF RAIN, PAIR SHOWERS OR FREEZING RAIN		<p>Light = Trace (< .005in.) to .10 inches per hour Moderate = .11 to .30 inches per hour Heavy = > .30 inches per hour</p>
131	084	OCCURRENCE OF RAIN SQUALLS, DRIZZLE OR FREEZING DRIZZLE	0-9 Δ *	<p>0 = None 1 = Light rain squalls 2 = Moderate rain squalls 3 = Heavy rain squalls See note under field 129. Beginning Jan 1949 squalls were reported separately and these figures should not appear thereafter. 4 = Light drizzle 5 = Moderate drizzle 6 = Heavy drizzle 7 = Light freezing drizzle 8 = Moderate freezing drizzle 9 = Heavy freezing drizzle Δ = Unknown * = Original value invalid</p> <p>When drizzle or freezing drizzle occurs with other weather phenomena: Light = Trace (< .005 in) to .01 inches per hour Moderate = > .01 to .02 inches per hour Heavy = > .02 inches per hour</p> <p>When drizzle or freezing drizzle occurs alone: Light = Visibility 5/8 mile or greater Moderate = Visibility 5/16 - 1/2 mile Heavy = Visibility 1/4 mile or less</p>
132	085	OCCURRENCE OF SNOW, SNOW PELLETS OR ICE CRYSTALS	0-9 Δ *	<p>0 = None 1 = Light snow 2 = Moderate snow 3 = Heavy snow 4 = Light snow pellets 5 = Moderate snow pellets 6 = Heavy snow pellets 7 = Light ice crystals 8 = Moderate ice crystals 9 = Heavy ice crystals Δ = Unknown * = Original value invalid</p> <p>Beginning April 1963 any occurrence of ice crystals is recorded as an 8. Prior to this date intensities were reported.</p>

Oct 1975

TAPE DECK		AIRWAYS SURFACE OBSERVATIONS		PAGE NO.
1440				11
TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT	TAPE CONFIGURATION	CODE DEFINITIONS AND REMARKS
133	086	OCCURRENCE OF SNOW SHOWERS, SNOW SQUALLS OR SNOW GRAINS	0-9 Δ *	<p>0 = None 1 = Light snow showers 2 = Moderate snow showers 3 = Heavy snow showers 4 = Light snow squall 5 = Moderate snow squall 6 = Heavy snow squall</p> <p>Beginning Jan 1949 squalls were reported separately and these figures should not appear thereafter.</p> <p>7 = Light snow grains 8 = Moderate snow grains 9 = Heavy snow grains Δ = Unknown * = Original value invalid</p>
134	087	OCCURRENCE OF SLEET, SLEET SHOWERS OR HAIL	0-9 Δ *	<p>0 = None 1 = Light sleet or sleet showers (ice pellets) 2 = Moderate sleet or sleet showers (ice pellets) 3 = Heavy sleet or sleet showers (ice pellets) 4 = Light hail 5 = Moderate hail 6 = Heavy hail 7 = Light small hail 8 = Moderate small hail 9 = Heavy small hail Δ = Unknown * = Original value invalid</p> <p>Prior to April 1970 ice pellets were coded as sleet. Beginning April 1970 sleet and small hail were redefined as ice pellets and are coded as a 1, 2 or 3 in this position. Beginning Sep 1956 intensities of hail were no longer reported and all occurrences were recorded as a 5.</p>
135	088	OCCURRENCE OF FOG, BLOWING DUST OR BLOWING SAND	0-5 Δ *	<p>0 = None 1 = Fog 2 = Ice fog 3 = Ground fog 4 = Blowing dust 5 = Blowing sand Δ = Unknown * = Original value invalid</p> <p>These values recorded only when visibility less than 7 miles.</p>

Oct 1975

TAPE DECK		PAGE NO.
1440	AIRWAYS SURFACE OBSERVATIONS	12

TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT	TAPE CONFIGURATION	CODE DEFINITIONS AND REMARKS																																																			
136	089	OCCURRENCE OF SMOKE, HAZE SMOKE AND HAZE, DUST, BLOWING SNOW, BLOWING SPRAY	0 - 6 Δ *	0 = None 1 = Smoke 2 = Haze 3 = Smoke and haze 4 = Dust 5 = Blowing snow 6 = Blowing spray Δ = Unknown * = Original value invalid These values recorded only when visibility less than 7 miles.																																																			
137	090 - 091	WIND DIRECTION - 36 POINTS	00 - 36 ΔΔ	Direction from which the wind is blowing, in tens of degrees. Stations began using this system on 01 Jan 1964. To achieve continuity with earlier records these values are converted to the 16 point scale and placed in field 104. 00 = Calm ΔΔ = Unknown <div>CONVERSION CODE</div> <table><tr><th>tens of degrees</th><th></th><th>16 pt.</th></tr><tr><td>35-01</td><td>=</td><td>11</td></tr><tr><td>02-03</td><td>=</td><td>12</td></tr><tr><td>04-05</td><td>=</td><td>22</td></tr><tr><td>06-07</td><td>=</td><td>32</td></tr><tr><td>08-10</td><td>=</td><td>33</td></tr><tr><td>11-12</td><td>=</td><td>34</td></tr><tr><td>13-14</td><td>=</td><td>44</td></tr><tr><td>15-16</td><td>=</td><td>54</td></tr><tr><td>17-19</td><td>=</td><td>55</td></tr><tr><td>20-21</td><td>=</td><td>56</td></tr><tr><td>22-23</td><td>=</td><td>66</td></tr><tr><td>24-25</td><td>=</td><td>76</td></tr><tr><td>26-28</td><td>=</td><td>77</td></tr><tr><td>29-30</td><td>=</td><td>78</td></tr><tr><td>31-32</td><td>=</td><td>88</td></tr><tr><td>33-34</td><td>=</td><td>18</td></tr></table>	tens of degrees		16 pt.	35-01	=	11	02-03	=	12	04-05	=	22	06-07	=	32	08-10	=	33	11-12	=	34	13-14	=	44	15-16	=	54	17-19	=	55	20-21	=	56	22-23	=	66	24-25	=	76	26-28	=	77	29-30	=	78	31-32	=	88	33-34	=	18
tens of degrees		16 pt.																																																					
35-01	=	11																																																					
02-03	=	12																																																					
04-05	=	22																																																					
06-07	=	32																																																					
08-10	=	33																																																					
11-12	=	34																																																					
13-14	=	44																																																					
15-16	=	54																																																					
17-19	=	55																																																					
20-21	=	56																																																					
22-23	=	66																																																					
24-25	=	76																																																					
26-28	=	77																																																					
29-30	=	78																																																					
31-32	=	88																																																					
33-34	=	18																																																					
138	092 - 094	BLANK	ΔΔΔ																																																				
139	095	RECORD MARK	†, Δ	This position may contain a blank or record mark.																																																			

Appendix G

EMISSION DATA FORMAT

<u>FIELD NAME</u>	<u>FORMAT</u>	<u>LENGTH</u>	<u>CODES OR VALUES</u>
YEAR	I4	4	INVENTORY YEAR
COUNTY	I2	2	EDS COUNTRY NUMBER
COUNTYID	A3	3	ALPHA COUNTY ID, TABLE II, EDTAD*
COUNTY NAME	A15	15	COUNTY NAME
FACILITYID	I9	9	FACILITY ID
AIRBASIN	A3	3	AIR BASIN, TABLE V, APPI, EDTAD
SOURCE	A1	1	TYPE OF DATA-POINT(P) AREA(A)
FACSIPCODE	I9	9	ZIP CODE OF FACILITY
MAILZIPCODE	I9	9	MAILING ZIP CODE
CITYCODE	I4	4	CITY CODE, TABLE IV, APPI, EDTAD
AREA CODE	I3	3	AREA CODE
PHONENUMBER	I7	7	PHONE NUMBER
UTMEAST	F9.3	9	UTM EAST IN KILOMETERS
UTMNORTH	F9.3	9	UTM NORTH IN KILOMETERS
FACILITYNAME	A30	30	FACILITY NAME
CITY	A20	20	CITY NAME
ATTENTION	A30	30	PERSON RESPONSIBLE FOR MAIL
STREET	A30	30	STREET NUMBER AND NAME
EISNAMEADDR	A43	43	EIS PLANE NAME AND ADDRESS
OWNERTYPE	A1	1	TYPE OF ORGANIZATION OWNING FA P - PRIVATE OWNERSHIP L - LOCAL GOVT. S - STATE GOVT. F - FEDERAL GOVT. U - UTILITY
CONTACT	A30	30	PERSON TO CONTACT
DISTRICT	A3	3	RESPONSIBLE DISTRICT
FACILCHECK	A1	1	ALWAYS 'Y'
DEVICEID	I5	5	DEVICE ID

<u>FIELD NAME</u>	<u>FORMAT</u>	<u>LENGTH</u>	<u>CODES OR VALUES</u>
STACKID	I5	5	STACK ID
OPCYCLE	I2	2	OPERATING CYCLE ID, TABLE XVII, XVIII, APPI, EDTAD
HOURSPERDAY	I2	2	AVERAGE OPERATING HOURS PER DAY
DAYPERWEEK	I1	1	AVERAGE OPERATING DAYS PER WEEK
WEEKSPERYR	I2	2	OPERATING WEEKS PER YEAR
DEVCONTROL1	I5	5	CONTROL CLOSEST TO SOURCE
DEVCONTROL2	I5	5	CONTROL SECOND FROM SOURCE
DEVCONTROL3	I5	5	CONTROL THIRD FROM SOURCE
DEVCONTROL4	I5	5	CONTROL FOURTH FROM SOURCE
DEVCONTROL5	I5	5	CONTROL FIFTH FROM SOURCE
			DEV CONTROL CODES FOR UP TO 5 CONTROL DEVICES FROM TABLE VIII, APPENDIX I, CARB EMISSION DATA TURN AROUND DOCUMENT.* OVER 50 3-NUMBER CODES LISTED.
COMPLISCHED	I6	6	DATE DEV MUST BE COMPLIANT (YM)
COMPLIDATE	I6	6	DATE OF LAST CHANGE (YRMODA)
SPACEHEAT	F4.2	4	% OF FUEL USED FOR SPACE HEAT
BOILERCAPAC	F8.0	8	BOILER CAPACITY IN M BTU
CONFIDENTIAL	A1	1	PROCRATE CONFIDENTIAL? Y OR N
PERMITID	A12	12	LOCAL PERMIT INFO
COMPLISTATUS	A1	1	
CONTROLREG1	A8	8	LOCAL CONTROL REGULATION 1
CONTROLREG2	A8	8	LOCAL CONTROL REGULATION 2
CONTROLREG3	A8	8	LOCAL CONTROL REGULATION 3
LOCALDEVNAME	A16	16	LOCAL NAME FOR THIS DEVICE
JANTHRUPUT	F5.3	5	FRACTION THRUPUT FOR JANUARY
FEBTHRUPUT	F5.3	5	FRACTION THRUPUT FOR FEBRUARY
MARTHRUPUT	F5.3	5	FRACTION THRUPUT FOR MARCH
APRTHRUPUT	F5.3	5	FRACTION THRUPUT FOR APRIL
MAYTHRUPUT	F5.3	5	FRACTION THRUPUT FOR MAY
JUNTHRUPUT	F5.3	5	FRACTION THRUPUT FOR JUNE
JULTHRUPUT	F5.3	5	FRACTION THRUPUT FOR JULY
AUGTHRUPUT	F5.3	5	FRACTION THRUPUT FOR AUGUST

<u>FIELD NAME</u>	<u>FORMAT</u>	<u>LENGTH</u>	<u>CODES OR VALUES</u>
SEPTHRUPUT	F5.3	5	FRACTION THRUPUT FOR SEPTEMBER
OCTTHRUPUT	F5.3	5	FRACTION THRUPUT FOR OCTOBER
NOVTHRUPUT	F5.3	5	FRACTION THRUPUT FOR NOVEMBER
DECTHRUPUT	F5.3	5	FRACTION THRUPUT FOR DECEMBER
STKUTMEAST	F9.3	9	UTM EAST FOR STACK IN KM
STKUTMNORTH	F9.3	9	UTM NORTH FOR STACK IN KM
STACKHEIGHT	F8.0	8	STACK HEIGHT (FEET)
STACKDIAM	F8.1	8	STACK DIAMETER (FEET)
GASVELOCITY	F8.0	8	GAS VELOCITY (FT/MIN)
GASTEMP	F8.0	8	GAS TEMPERATURE (DEG F)
GASFLOWRATE	F8.0	8	GAS FLOWRATE (FT3/MIN)
CES	I5	5	CATEGORY OF EMISSIONS, REFER EMISSION DATA TURN AROUND DOCUMENT, P 26
SIC	I4	4	SIC CODE, REFER STANDARD INDUSTRIAL CLASSIFICATION CODE, SUPT. OF DOCUMENTS, WASH., D.C., APPENDIX II.
SCC	I8	8	SCC CODE, REFER AE MANUAL, VOL 5, EPA 450/2-76-005-2)
PRX	F10	10	PROCESS RATE IN SCC UNITS. EACH CES HAS A SPECIFIED SET OF UNITS; REFER EMISSION DATA TURN AROUND DOCUMENT, APPENDIX II.
NOPX	F6.4	6	OPERATING RATE AS % OF MAX
MAXDX	F10.3	10	MAXIMUM DESIGN PROCESS RATE, CES UNITS
SX	F6.4	6	FUEL SULFUR CONTENT-FRACTION
ASHX	F6.4	6	FUEL ASH CONTENT-FRACTION
HEATX	F6.0	6	FUEL HEAT CONTENT IN M BTU
PRDESCX	A25	25	PROCESS DESCRIPTION
POLLUTANT	I5	5	SAROAD POLLUTANT CODE
EMFACTX	F9.3	9	EMISSION FACTOR
UEMFACTX	F10.3	10	UNCONTROLLED EMISSION FACTOR. THE AVERAGE RATE AT WHICH A POLLUTANT WOULD BE EMITTED AS A RESULT OF SOURCE ACTIVITY IF NO CONTROL EQUIPMENT WAS USED. UNITS ARE POUNDS PER CES UNITS.

<u>FIELD NAME</u>	<u>FORMAT</u>	<u>LENGTH</u>	<u>CODES OR VALUES</u>
ALLOWABLEEMS	F9.1	9	ALLOWABLE EMISSIONS IN TONS/YR
EMISSIONS	F9.1	9	ANNUAL EMISSIONS IN TONS/YR
METHX	A1	1	METHOD USED TO COMPUTE EMISSION 0 - KNOWN ZERO EMISSIONS 1 - BASED ON SOURCE TESTING 2 - BASED ON MATERIAL BALANCE 3 - CALCULATED USING STD EPA FACTORS 4 - BEST ESTIMATE 5 - FACTOR DIFFERENT THAN EPA 6 - UNDER CONSTRUCTION 7 - SHUTDOWN
ACTIVITY	I3	3	ACTIVITY CODE - TABLE X, APP.I, EMISSION DATA TURN AROUND DOCUMENT
PROCESS	I3	3	PROCESS CODE - TABLE XI, APP.I, EMISSION DATA TURN AROUND DOCUMENT
EANDM	I3	3	ENTRAIN. AND MAT. CODE - TABLE XII, APP.I, EMISSION DATA TURN AROUND DOCUMENT
DIMENSION	A36	36	DIMENSION CODES - TABLE XIII, APP.I, EMISSION DATA TURN AROUND DOCUMENT
GROWTH	I3	3	GROWTH CODE, INTERNAL FOR ARB USE
CONTROL	I3	3	CONTROL CODE, INTERNAL FOR ARB USE
TSPCODE	I3	3	
VOCCODE	I3	3	
ACTIVITYNAME	A30	30	ACTIVITY NAME
PROCESSNAME	A30	30	PROCESS NAME
EANDMNAME	A30	30	ENTRAINMENT NAME
GROWTHNAME	A30	30	GROWTH NAME
CONTROLNAME	A30	30	CONTROL NAME
DIMNAME	A130	130	DIMENSION NAME
AREAFLAG	A1	1	
AREADAILYOP	I1	2	AREA SOURCE DAILY OPCYCLE
AREAWEEKLYOP	I2	2	AREA SOURCE WEEKLY OPCYCLE
AREAANNUALOP	I2	2	AREA SOURCE ANNUAL OPCYCLE
POLLUTNAME	A4	4	POLLUTANT NAME
SCCNAME	A20	20	SHORT SCC NAME
FRACTIONRHC	F6.4	6	FRACTION OF RHC

<u>FIELD NAME</u>	<u>FORMAT</u>	<u>LENGTH</u>	<u>CODES OR VALUES</u>
SCC3NAME	A20	20	NAME OF FIRST 3 DIGETS
SCC6NAME	A20	20	NAME OF FIRST 6 DIGETS OF SCC
SCC8NAME	A20	20	NAME OF ALL 8 SCC DIGETS
COEMFACT	F6.2	6	CO EMFACT IN LBS PER UNIT
NOXEMFACT	F6.2	6	NOX EMFACT IN LBS PER UNIT
SOXEMFACT	F6.2	6	SOX EMFACT IN LBS PER UNIT
TOGEMFACT	F6.2	6	TOG EMFACT IN LBS PER UNIT
TSPEMFACT	F6.2	6	TSP EMFACT IN LBS PER UNIT
SCCUNITS	A25	25	SCC UNITS
SICNAME	A30	30	SHORT SIC NAME
SIC2NAME	A30	30	NAME OF FIRST TWO DIGITS
SIC3NAME	A30	30	NAME OF FIRST 3 DIGETS OF SIC
SIC4NAME	A30	30	NAME OF ALL FOUR SIC DIGETS
*** SLACK	X1	1	
TOTAL		1252	

Appendix H

UPPER AIR DATA FORMAT, EDWARDS AIR FORCE BASE, OCT 1983

A sample data set for one month only is included in the data base. The files are a printout of data with labels, so the format is completely explained on the printouts themselves. Two or more printouts for each day are given; some days have multiple readings (files), as detailed in Appendix D. Complete information and additional upper air data may be obtained from EAFB, Marian Doran (805) 277-4244.

Appendix I

EPRI AIR QUALITY DATA FORMAT, BLYTHE, 1981-82

(The entire documentation received for this data file has been included, as is.)

WRAQS Data Tape Inventories

SUBMISSION TO ROCKWELL

WRAQS STATE-10 SUBMISSION TAPE INVENTORY

PARAMETER	SITE - LOCATION	PERIOD	TAPE#	FILE#	FILE NAME
PVIS, PVOC, P(1-3)VR, P(1-3)OC, CLDCVR	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	1	AVOVB8
WS, WD, TEMP, DPT, RH, PRECIP	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	2	AVNET8
DAILY PRECIPITATION	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	3	AVDPP8
BSP, NEPHVR	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	4	AVHVR8
TARGET CONDITION CODE	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	5	AVTCC8
TELERADIOMETER GREEN VISUAL RANGE	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	6	AVGVR8
GREEN TARGET RADIANCE	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	7	AVGTL8
GREEN SKY RADIANCE	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	8	AVGSL8
RED TARGET RADIANCE	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	9	AVRTL8
RED SKY RADIANCE	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	10	AVRSL8
BLUE TARGET RADIANCE	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	11	AVRTL8
BLUE SKY RADIANCE	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	12	AVRSL8
ULTRA VIOLET TARGET RADIANCE	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	13	AVUTL8
ULTRA VIOLET SKY RADIANCE	8 - BLYTHE, CA	01/JAN/81-31/OCT/82	1553	14	AVUSL8
47MM 3 MICRON FINE	8 - BLYTHE, CA	04/SEP/81-15/OCT/82	1553	15	AVRKE8
47MM 3 MICRON FINE BLANKS	8 - BLYTHE, CA	11/SEP/81-13/OCT/82	1553	16	AVREE8
CARBON	8 - BLYTHE, CA	05/SEP/81-07/OCT/82	1553	17	AVCRB8
CARBON BLANKS	8 - BLYTHE, CA	26/SEP/81-07/OCT/82	1553	18	AVCBB8
NITRIC ACID	8 - BLYTHE, CA	13/FEB/82-11/AUG/82	1553	19	AVNAB8
NITRIC ACID BLANKS	8 - BLYTHE, CA	07/FEB/82-03/SEP/82	1553	20	AVNBB8

State-10 Tape File Format Description

STATE-10 TAPE FILE FORMAT DESCRIPTION

LOGICAL RECORD 1

col 1-2	The code "10" indicating STATE-10 data format.
col 4-5 p	Physical record length, in characters. A multiple of 4, and not to exceed 80.
col 7-9 L	Logical record length, in characters. A multiple of the physical record length.
col 11-12 n	Number of parameters (channels, or data, per observation).
col 14	Number of supplementary information records (= 0).
col 16-21	File name: See the tape inventory printouts.

LOGICAL RECORD 2

col 1 - L	Project name and data type contained in this file.
-----------	--

LOGICAL RECORD 3

col 1-L	Data encoding format. This record contains a syntactically correct FORTRAN format specification, utilizing only F and X format codes and "read record" slashes, suitable for decoding the data. Example:(4(F08.00, 1X), F10.2, 1X, F08.00, 1X, 24X).
---------	--

LOGICAL RECORD 8

Suggested lower default bound for plotting the n parameters. In the same format as the data (see record 3).

LOGICAL RECORD 9

Suggested upper default bound for plotting the n parameters. In the same format as the data (see record 3).

NOTE: The plotting default bounds (logical records 8 and 9) are the normally expected range for the data for the given conditions. They are the bounds one would normally use to plot the data so as to best display it graphically.

LOGICAL RECORD 10

col 1-10 J Number of observations (data records in this file).
col 11- L Blank fill

LOGICAL RECORDS 11 to J+10

Data of 1st observation (in format specified by record 3)

.
. .
.

Data of last (Jth) observation.

NOTE Date, if appropriate, appears in each data record as the first data field in the form MMDDYY(month, day, year) and start time as the second data field in the form of HHMMSS(hours, minutes, seconds). The time is always given as a Local Standard Time.

o Off Scale(at top of chart, data presumed good)	-999010
o Special Experiment(instrument off-line for bag sample analysis or removed for special measurements in area)	-999012
o Variable Wind Direction	-999014
o Out for Repair(instrument problem has been recognized and the instrument is no longer sampling while being repaired)	-999013
o Interference(acts of nature)	-999011
o Operator Error	-999009
o Instrument Zero/Span check	-999685
o Precision Check	-999409
o System Audit	-999485
o Precipitation Exists per Observer(no record)	-999424
o Not Visible	-999376
o Mishandled Filter(label, analysis, or contamination error)	-999334
o Negative Mass(large negative value - outside tolerance)	-999367
o Instrument Warm-up	-999427
o Performance Audit	-999407
o Other Data Implies Target is Not Visible	-999134
o Other Data Implies Target is Visible	-999142
o Unrealistic Visual Range*	-999558

DATA FIELD FLAGGING

Data flags were used to identify possible suspect data values within the aerosol, carbon and nitric acid data files. Most all records in these files contain two (2) flagging fields. The first flag field contains up to four (4) digits, and the second up to five (5) digits (leading zeros are truncated.), with the exceptions of nitric acid blanks and non-blanks, and carbon non-blanks. Each digit position left of the decimal place in each flag field is designated for flagging a specific parameter (value) within the corresponding record. Flagging field digit assignments and flagging code descriptions are as follows:

*Independent assessment of other parameters indicates that observed visual range is not realistic.

Flag Field No.	Field Digit No.	Flagged Parameter
1	1	All filter parameters

Example: 1., indicates all parameters are flagged with a code 1.

For nitric acid data and blanks:

Flag Field No.	Field Digit No.	Flagged Parameter
1	1	Nitric Acid

Example: 1., indicates nitric acid is flagged with code 1.

Flagging Code Descriptions

<u>Code No.</u>	<u>Description</u>
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0/Blank	Indicates not flagged.
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1	The analytical value for this parameter is significantly higher than expected based on corresponding data from other instruments or from comparable filter samples (typically $>>3\sigma$).
---	--

2	The analytical value for this parameter is significantly lower than expected based on corresponding data from other instruments or from comparable filter samplers (typically $>>3\sigma$).
---	--

3	The field or analytical technician reports operational difficulty or filter damage which has uncertain effects on the data.
---	---

WRAQS Record Format

Field

1
2
3
4
5
6
7
8

Meteorological Data

RECORD FORMAT FOR METEOROLOGICAL DATA

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-27	Wind Speed (Meters/Second)	F9.1
4	29-37	Wind Direction (Degrees)	F9.1
5	39-47	Temperature (°C)	F9.1
6	49-57	Dewpoint Temperature (°C)	F9.1
7	59-67	Relative Humidity (%)	F9.1
8	69-77	Precipitation (Millimeters)	F9.1

RECORD FORMAT FOR DAILY PRECIPITATION DATA

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	9-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-27	Precipitation (Millimeters)	F9.1

RECORD FORMAT FOR WINDS ALOFT DATA (PIBAL)

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F3.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F3.0
3	19-27	Elevation Angle (Degrees)	F9.1
4	29-37	Azimuth Angle (Degrees)	F9.1
5	39-47	Altitude (Meters)	F3.0
6	49-57	Wind Speed (Meters/Second)	F9.1
7	59-67	Wind Direction (Degrees)	F3.0
8	69-77	X - Coordinate (Meters)	F3.0
9	1-8*	Y - Coordinate (Meters)	F3.0

*Second line of data record.

Prevailing Visibility and Sky Cover

RECORD FORMAT FOR PREVAILING VISIBILITY AND CLOUD COVER

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-27	Observed Prevailing Visibility (KM)	F9.1
4	29-36	Prevailing Visibility Obstruction Code	F8.0
5	38-46	Path 1 Observed Visual Range (KM)	F9.1
6	48-55	Path 1 Visibility Obstruction Code	F8.0
7	57-65	Path 2 Observed Visual Range (KM)	F9.1
8	67-74	Path 2 Visibility Obstruction Code	F8.0
9	1-9*	Path 3 Observed Visual Range (KM)	F9.1
10	11-18	Path 3 Visibility Obstruction Code	F8.0
11	19-27	Cloud Cover (tenths)	F8.0

The following sites have a different numbering scheme (the above format conditions apply):

Site 8: Path 1, Path 3, Path 4

Site 9: Path 1, Path 3, Path 4

*Second line of data record.

Nephelometer Data

RECORD FORMAT FOR NEPHELOMETER DATA

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	9-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-28	Particle Scattering Coefficient (BSP in 10^{-4} M^{-1})	F10.2
4	30-38	Nephelometer Visual Range (KM)	F9.1

REC-10

Date

1

2

3

4

5

6

7

Teleradiometer Data

8

9

10

The following data were obtained from the Teleradiometer
at the following locations:

Site 1: Target 1, Target 2, Target 3, Target 4, Target 5

Site 2: Target 1, Target 2, Target 3, Target 4, Target 5

Site 3: Target 1, Target 2, Target 3, Target 4, Target 5

Site 4: Target 1, Target 2, Target 3, Target 4, Target 5

Site 5: Target 1, Target 2, Target 3, Target 4

*Second line of data recorded.

RECORD FORMAT FOR TELERADIOMETER TARGET CONDITION CODES

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-26	Target 1, Teleradiometer Target/Sky Condition Code (TCC1)	F8.0
4	28-35	Target 2, Teleradiometer Target/Sky Condition Code (TCC2)	F8.0
5	37-44	Target 3, Teleradiometer Target/Sky Condition Code (TCC3)	F8.0
6	46-53	Target 4, Teleradiometer Target/Sky Condition Code (TCC4)	F8.0
7	55-62	Target 5, Teleradiometer Target/Sky Condition Code (TCC5)	F8.0
8	64-71	Target 6, Teleradiometer Target/Sky Condition Code (TCC6)	F8.0
9	1-8*	Target 7, Teleradiometer Target/Sky Condition Code (TCC7)	F8.0
10	10-17	Target 8, Teleradiometer Target/Sky Condition Code (TCC8)	F8.0
11	19-26	Target 9, Teleradiometer Target/Sky Condition Code (TCC9)	F8.0

The following sites had fewer targets and a different numbering scheme (the above format continues to apply):

Site 5: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 6: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 8: Target 0, Target 1, Target 2, Target 6, Target 7, Target 8, Target 9

Site 9: Target 0, Target 1, Target 4, Target 5, Target 6, Target 7, Target 8

Site 11: Target 3, Target 4, Target 5, Target 6

*Second line of data record.

RECORD FORMAT FOR TELERADIOMETER GREEN VISUAL RANGE

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-27	Teleradiometer Green Visual Range Target 1 (Kilometers)	F9.1
4	29-37	Teleradiometer Green Visual Range Target 2 (Kilometers)	F9.1
5	39-47	Teleradiometer Green Visual Range Target 3 (Kilometers)	F9.1
6	49-57	Teleradiometer Green Visual Range Target 4 (Kilometers)	F9.1
7	59-67	Teleradiometer Green Visual Range Target 5 (Kilometers)	F9.1
8	69-77	Teleradiometer Green Visual Range Target 6 (Kilometers)	F9.1
9	1-9*	Teleradiometer Green Visual Range Target 7 (Kilometers)	F9.1
10	11-19	Teleradiometer Green Visual Range Target 8 (Kilometers)	F9.1
11	21-29	Teleradiometer Green Visual Range Target 9 (Kilometers)	F9.1

The following sites had fewer targets and a different numbering scheme (the above format continues to apply):

Site 5: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 6: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 8: Target 0, Target 1, Target 2, Target 6, Target 7, Target 8, Target 9

Site 9: Target 0, Target 1, Target 4, Target 5, Target 6, Target 7, Target 8

Site 11: Target 3, Target 4, Target 5, Target 6

*Second line of data record.

RECORD FORMAT FOR TELERADIOMETER ULTRA VIOLET SKY

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-28	Target 1, Teleradiometer Ultra Violet Sky Radiance (μ W/cm ² Sr nm)	F10.2
4	30-39	Target 2, Teleradiometer Ultra Violet Sky Radiance (μ W/cm ² Sr nm)	F10.2
5	41-50	Target 3, Teleradiometer Ultra Violet Sky Radiance (μ W/cm ² Sr nm)	F10.2
6	52-61	Target 4, Teleradiometer Ultra Violet Sky Radiance (μ W/cm ² Sr nm)	F10.2
7	63-72	Target 5, Teleradiometer Ultra Violet Sky Radiance (μ W/cm ² Sr nm)	F10.2
8	1-10*	Target 6, Teleradiometer Ultra Violet Sky Radiance (μ W/cm ² Sr nm)	F10.2
9	12-21	Target 7, Teleradiometer Ultra Violet Sky Radiance (μ W/cm ² Sr nm)	F10.2
10	23-32	Target 8, Teleradiometer Ultra Violet Sky Radiance (μ W/cm ² Sr nm)	F10.2
11	34-43	Target 9, Teleradiometer Ultra Violet Sky Radiance (μ W/cm ² Sr nm)	F10.2

The following sites had fewer targets and a different numbering scheme (the above format continues to apply):

Site 5: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 6: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 8: Target 0, Target 1, Target 2, Target 6, Target 7, Target 8, Target 9

Site 9: Target 0, Target 1, Target 4, Target 5, Target 6, Target 7, Target 8

Site 11: Target 3, Target 4, Target 5, Target 6

*Second line of data record.

RECORD FORMAT FOR TELERADIOMETER ULTRA VIOLET TARGET

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-28	Target 1, Teleradiometer Ultra Violet Target Radiance (μ W/cm ² Sr nm)	F10.2
4	30-39	Target 2, Teleradiometer Ultra Violet Target Radiance (μ W/cm ² Sr nm)	F10.2
5	41-50	Target 3, Teleradiometer Ultra Violet Target Radiance (μ W/cm ² Sr nm)	F10.2
6	52-61	Target 4, Teleradiometer Ultra Violet Target Radiance (μ W/cm ² Sr nm)	F10.2
7	63-72	Target 5, Teleradiometer Ultra Violet Target Radiance (μ W/cm ² Sr nm)	F10.2
8	1-10*	Target 6, Teleradiometer Ultra Violet Target Radiance (μ W/cm ² Sr nm)	F10.2
9	12-21	Target 7, Teleradiometer Ultra Violet Target Radiance (μ W/cm ² Sr nm)	F10.2
10	23-32	Target 8, Teleradiometer Ultra Violet Target Radiance (μ W/cm ² Sr nm)	F10.2
11	34-43	Target 9, Teleradiometer Ultra Violet Target Radiance (μ W/cm ² Sr nm)	F10.2

The following sites had fewer targets and a different numbering scheme (the above format continues to apply):

Site 5: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 6: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 8: Target 0, Target 1, Target 2, Target 6, Target 7, Target 8, Target 9

Site 9: Target 0, Target 1, Target 4, Target 5, Target 6, Target 7, Target 8

Site 11: Target 3, Target 4, Target 5, Target 6

*Second line of data record.

RECORD FORMAT FOR TELERADIOMETER RED SKY RADIANCE

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-28	Target 1, Teleradiometer Red Sky Radiance (μ W/cm ² Sr nm)	F10.2
4	30-39	Target 2, Teleradiometer Red Sky Radiance (μ W/cm ² Sr nm)	F10.2
5	41-50	Target 3, Teleradiometer Red Sky Radiance (μ W/cm ² Sr nm)	F10.2
6	52-61	Target 4, Teleradiometer Red Sky Radiance (μ W/m ² Sr nm)	F10.2
7	63-72	Target 5, Teleradiometer Red Sky Radiance (μ W/cm ² Sr nm)	F10.2
8	1-10*	Target 6, Teleradiometer Red Sky Radiance (μ W/cm ² Sr nm)	F10.2
9	12-21	Target 7, Teleradiometer Red Sky Radiance (μ W/cm ² Sr nm)	F10.2
10	23-32	Target 8, Teleradiometer Red Sky Radiance (μ W/cm ² Sr nm)	F10.2
11	34-43	Target 9, Teleradiometer Red Sky Radiance (μ W/cm ² Sr nm)	F10.2

The following sites had fewer targets and a different numbering scheme (the above format continues to apply):

Site 5: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 6: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 8: Target 0, Target 1, Target 2, Target 6, Target 7, Target 3, Target 9

Site 9: Target 0, Target 1, Target 4, Target 5, Target 6, Target 7, Target 3

Site 11: Target 3, Target 4, Target 5, Target 6

*Second line of data record.

RECORD FORMAT FOR TELERADIOMETER RED TARGET RADIANCE

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-28	Target 1, Teleradiometer Red Target Radiance (μ W/cm ² Sr nm)	F10.2
4	30-39	Target 2, Teleradiometer Red Target Radiance (μ W/cm ² Sr nm)	F10.2
5	41-50	Target 3, Teleradiometer Red Target Radiance (μ W/cm ² Sr nm)	F10.2
6	52-61	Target 4, Teleradiometer Red Target Radiance (μ W/m ² Sr nm)	F10.2
7	63-72	Target 5, Teleradiometer Red Target Radiance (μ W/cm ² Sr nm)	F10.2
8	1-10*	Target 6, Teleradiometer Red Target Radiance (μ W/cm ² Sr nm)	F10.2
9	12-21	Target 7, Teleradiometer Red Target Radiance (μ W/cm ² Sr nm)	F10.2
10	23-32	Target 8, Teleradiometer Red Target Radiance (μ W/cm ² Sr nm)	F10.2
11	34-43	Target 9, Teleradiometer Red Target Radiance (μ W/cm ² Sr nm)	F10.2

The following sites had fewer targets and a different numbering scheme (the above format continues to apply):

Site 5: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 6: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 8: Target 0, Target 1, Target 2, Target 6, Target 7, Target 3, Target 9

Site 9: Target 0, Target 1, Target 4, Target 5, Target 6, Target 7, Target 8

Site 11: Target 3, Target 4, Target 5, Target 6

*Second line of data record.

RECORD FORMAT FOR TELERADIOMETER BLUE SKY RADIANCE

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-28	Target 1, Teleradiometer Blue Sky Radiance (μ W/cm ² Sr nm)	F10.2
4	30-39	Target 2, Teleradiometer Blue Sky Radiance (μ W/cm ² Sr nm)	F10.2
5	41-50	Target 3, Teleradiometer Blue Sky Radiance (μ W/cm ² Sr nm)	F10.2
6	52-61	Target 4, Teleradiometer Blue Sky Radiance (μ W/cm ² Sr nm)	F10.2
7	63-72	Target 5, Teleradiometer Blue Sky Radiance (μ W/cm ² Sr nm)	F10.2
8	1-10*	Target 6, Teleradiometer Blue Sky Radiance (μ W/cm ² Sr nm)	F10.2
9	12-21	Target 7, Teleradiometer Blue Sky Radiance (μ W/cm ² Sr nm)	F10.2
10	23-32	Target 8, Teleradiometer Blue Sky Radiance (μ W/cm ² Sr nm)	F10.2
11	34-43	Target 9, Teleradiometer Blue Sky Radiance (μ W/cm ² Sr nm)	F10.2

The following sites had fewer targets and a different numbering scheme (the above format continues to apply):

Site 5: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 6: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 8: Target 0, Target 1, Target 2, Target 6, Target 7, Target 8, Target 9

Site 9: Target 0, Target 1, Target 4, Target 5, Target 6, Target 7, Target 8

Site 11: Target 3, Target 4, Target 5, Target 6

*Second line of data record.

RECORD FORMAT FOR TELERADIOMETER BLUE TARGET RADIANCE

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-28	Target 1, Teleradiometer Blue Target Radiance (μ W/cm ² Sr nm)	F10.2
4	30-39	Target 2, Teleradiometer Blue Target Radiance (μ W/cm ² Sr nm)	F10.2
5	41-50	Target 3, Teleradiometer Blue Target Radiance (μ W/cm ² Sr nm)	F10.2
6	52-61	Target 4, Teleradiometer Blue Target Radiance (μ W/cm ² Sr nm)	F10.2
7	63-72	Target 5, Teleradiometer Blue Target Radiance (μ W/cm ² Sr nm)	F10.2
8	1-10*	Target 6, Teleradiometer Blue Target Radiance (μ W/cm ² Sr nm)	F10.2
9	12-21	Target 7, Teleradiometer Blue Target Radiance (μ W/cm ² Sr nm)	F10.2
10	23-32	Target 8, Teleradiometer Blue Target Radiance (μ W/cm ² Sr nm)	F10.2
11	34-43	Target 9, Teleradiometer Blue Target Radiance (μ W/cm ² Sr nm)	F10.2

The following sites had fewer targets and a different numbering scheme (the above format continues to apply):

Site 5: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 6: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 8: Target 0, Target 1, Target 2, Target 6, Target 7, Target 8, Target 9

Site 9: Target 0, Target 1, Target 4, Target 5, Target 6, Target 7, Target 8

Site 11: Target 3, Target 4, Target 5, Target 6

*Second line of data record.

RECORD FORMAT FOR TELERADIOMETER GREEN SKY RADIANCE

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-28	Target 1, Teleradiometer Green Sky Radiance (μ W/cm ² Sr nm)	F10.2
4	30-39	Target 2, Teleradiometer Green Sky Radiance (μ W/cm ² Sr nm)	F10.2
5	41-50	Target 3, Teleradiometer Green Sky Radiance (μ W/cm ² Sr nm)	F10.2
6	52-61	Target 4, Teleradiometer Green Sky Radiance (μ W/cm ² Sr nm)	F10.2
7	63-72	Target 5, Teleradiometer Green Sky Radiance (μ W/cm ² Sr nm)	F10.2
8	1-10*	Target 6, Teleradiometer Green Sky Radiance (μ W/cm ² Sr nm)	F10.2
9	12-21	Target 7, Teleradiometer Green Sky Radiance (μ W/cm ² Sr nm)	F10.2
10	23-32	Target 8, Teleradiometer Green Sky Radiance (μ W/cm ² Sr nm)	F10.2
11	34-43	Target 9, Teleradiometer Green Sky Radiance (μ W/cm ² Sr nm)	F10.2

The following sites had fewer targets and a different numbering scheme (the above format continues to apply):

Site 5: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 6: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 8: Target 0, Target 1, Target 2, Target 6, Target 7, Target 8, Target 9

Site 9: Target 0, Target 1, Target 4, Target 5, Target 6, Target 7, Target 8

Site 11: Target 3, Target 4, Target 5, Target 6

*Second line of data record.

RECORD FORMAT FOR TELERADIOMETER GREEN TARGET RADIANCE

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-28	Target 1, Teleradiometer Green Target Radiance (μ W/cm ² Sr nm)	F10.2
4	30-39	Target 2, Teleradiometer Green Target Radiance (μ W/cm ² Sr nm)	F10.2
5	41-50	Target 3, Teleradiometer Green Target Radiance (μ W/cm ² Sr nm)	F10.2
6	52-61	Target 4, Teleradiometer Green Target Radiance (μ W/cm ² Sr nm)	F10.2
7	63-72	Target 5, Teleradiometer Green Target Radiance (μ W/cm ² Sr nm)	F10.2
8	1-10*	Target 6, Teleradiometer Green Target Radiance (μ W/cm ² Sr nm)	F10.2
9	12-21	Target 7, Teleradiometer Green Target Radiance (μ W/cm ² Sr nm)	F10.2
10	23-32	Target 8, Teleradiometer Green Target Radiance (μ W/cm ² Sr nm)	F10.2
11	34-43	Target 9, Teleradiometer Green Target Radiance (μ W/cm ² Sr nm)	F10.2

The following sites had fewer targets and a different numbering scheme (the above format continues to apply):

Site 5: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 6: Target 0, Target 1, Target 2, Target 3, Target 4, Target 5, Target 6

Site 8: Target 0, Target 1, Target 2, Target 6, Target 7, Target 8, Target 9

Site 9: Target 0, Target 1, Target 4, Target 5, Target 6, Target 7, Target 8

Site 11: Target 3, Target 4, Target 5, Target 6

*Second line of data record.

Aerosol Data

RECORD FORMAT FOR 37MM AEROSOL DATA

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-26	Site Number	F8.0
4	28-35	Filter Number	F8.0
5	37-45	Total Flow Rate(Liters/Minute)	F9.1
6	47-56	Coarse Flow Rate (Liters/Minute)	F10.2
7	58-65	Total Elapsed Time (Minutes)	F8.0
8	67-75	Mass ($\mu\text{g}/\text{m}^3$)	F9.1
9	1-9*	SO ₄ ($\mu\text{g}/\text{m}^3$)	F9.1
10	10-19	NO ₃ ($\mu\text{g}/\text{m}^3$)	F9.1
11	21-29	NH ₄ ($\mu\text{g}/\text{m}^3$)	F9.1
12	31-39	SI ($\mu\text{g}/\text{m}^3$)	F9.1
13	41-50	CA ($\mu\text{g}/\text{m}^3$)	F9.1
14	52-60	FE ($\mu\text{g}/\text{m}^3$)	F9.1
15	62-71	PB ($\mu\text{g}/\text{m}^3$)	F10.2
16	1-8**	Flag Field 1	F8.0
17	10-17	Flag Field 2	F8.0

*Second line of data record.

**Third line of data record.

RECORD FORMAT FOR 47MM AEROSOL DATA

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-26	Site Number	F8.0
4	28-35	Filter Number	F8.0
5	37-44	Total Flow Rate(Liters/Minute)	F8.0
6	46-53	Total Elapsed Time (Minutes)	F8.0
7	55-63	Mass ($\mu\text{g}/\text{m}^3$)	F9.1
8	65-74	SO ₄ ($\mu\text{g}/\text{m}^3$)	F10.2
9	1-10*	NO ₃ ($\mu\text{g}/\text{m}^3$)	F10.2
10	12-21	NH ₄ ($\mu\text{g}/\text{m}^3$)	F10.2
11	23-32	SI ($\mu\text{g}/\text{m}^3$)	F10.2
12	34-43	CA ($\mu\text{g}/\text{m}^3$)	F10.2
13	45-54	FE ($\mu\text{g}/\text{m}^3$)	F10.2
14	56-65	PB ($\mu\text{g}/\text{m}^3$)	F10.2
15	67-75	S ($\mu\text{g}/\text{m}^3$)	F9.1
16	1-8**	Flag Field 1	F8.0
17	10-17	Flag Field 2	F8.0

*Second line of data record.

**Third line of data record.

RECORD FORMAT FOR CARBON DATA

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-26	Site Number	F8.0
4	28-35	Filter Number	F8.0
5	37-44	Time, Initial (HR/MIN)	F8.0
6	46-53	Time, Final (HR/MIN)	F8.0
7	55-62	Flow Rate (Liters/Minute)	F8.0
8	64-73	Volatile Organic Carbon Concentration ($\mu\text{g}/\text{m}^3$)	F10.2
9	1-10*	Acid Released Carbon Concentration ($\mu\text{g}/\text{m}^3$)	F10.2
10	12-21	Residual Organic Carbon Concentration ($\mu\text{g}/\text{m}^3$)	F10.2
11	23-32	Elemental Carbon Concentration ($\mu\text{g}/\text{m}^3$)	F10.2
12	34-41	Flag Field 1	F8.0
13	43-50	Flag Field 2	F8.0

*Second line of data record.

RECORD FORMAT FOR NITRIC ACID DATA

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-26	Site Number	F8.0
4	28-35	Filter Number	F8.0
5	37-44	Flow Rate (Liters/Minute)	F8.0
6	46-53	Total Elapsed Time (Minutes)	F8.0
7	55-64	Nitric Acid ($\mu\text{g}/\text{m}^3$)	F10.2
8	66-73	Flag Field	F8.0

RECORD FORMAT FOR 37MM AEROSOL DATA (BLANKS)

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-26	Site Number	F8.0
4	28-35	Filter Number	F8.0
5	37-44	Weight (μg)	F8.0
6	46-54	SO_4 (μg)	F9.1
7	56-64	NO_3 (μg)	F9.1
8	66-74	NH_4 (μg)	F9.1
9	1-9*	SI (μg)	F9.1
10	11-20	CA (μg)	F9.1
11	22-30	FE (μg)	F9.1
12	32-41	PB (μg)	F10.2
13	43-50	Flag Field 1	F8.0
14	52-59	Flag Field 2	F8.0

*Second line of data record.

RECORD FORMAT FOR 47MM AEROSOL DATA (BLANKS)

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-26	Site Number	F8.0
4	28-35	Filter Number	F8.0
5	37-44	Weight (μg)	F8.0
6	46-55	SO_4 (μg)	F10.2
7	57-66	NO_3 (μg)	F10.2
8	68-77	NH_4 (μg)	F10.2
9	1-10*	SI (μg)	F10.2
10	12-21	CA (μg)	F10.2
11	23-32	FE (μg)	F10.2
12	34-43	PB (μg)	F10.2
13	45-53	S (μg)	F9.1
14	55-62	Flag Field 1	F8.0
15	64-71	Flag Field 2	F8.0

*Second line of data record.

RECORD FORMAT FOR CARBON DATA BLANKS

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-26	Site Number	F8.0
4	28-35	Filter Number	F8.0
5	37-45	Volatile Organic Carbon (μg)	F9.1
6	47-55	Acid Released Carbon (μg)	F9.1
7	57-66	Residual Organic Carbon (μg)	F10.2
8	68-76	Elemental Carbon (μg)	F9.1
9	1-8*	Flag Field	F8.0

*Second line of data record.

RECORD FORMAT FOR NITRIC ACID DATA (BLANKS)

<u>Field</u>	<u>Character Position</u>	<u>Description</u>	<u>Format</u>
1	1-8	Month, Day, Year (MMDDYY)	F8.0
2	10-17	Hours, Minutes, Seconds (HHMMSS)	F8.0
3	19-26	Site Number	F8.0
4	28-35	Filter Number	F8.0
5	37-46	Nitric Acid (HNO ₃ W) ($\mu\text{g}/\text{m}^3$)	F10.2
6	48-5	Flag Field	F8.0

Appendix J

PIBALL DATA FORMAT, COOLWATER, 1979-82

China Lake Filter Data

Filter #	Start Date	Start Time (PST)	T	Volume	p _{sp}	p _{ap}	M _T	C _T	Soot	SO ₄	NO ₃ ⁻	NH ₄ ⁺	Al	Si	S	K	Ca	Fe	Pb
104	227	830	72.2	91.9	10.0	99.9	4940	520	110	820	70	330	42	92	317	16	18	23	36
112	307	930	47.5	59.8	10.0	99.9	5650	490	120	810	65	270	61	172	320	43	26	38	37
118	313	1055	22.3	27.1	35.0	99.9	10500	710	240	2000	110	730	0	85	811	20	0	17	42
128	314	1030	21.8	27.5	38.0	99.9	10200	3710	400	3740	270	1400	0	95	1160	0	0	41	45
133	321	830	24.0	29.6	25.0	99.9	8420	1490	210	1710	390	640	0	85	842	32	12	21	34
103	322	910	23.2	29.0	30.0	99.9	9580	3240	270	3250	370	1030	0	76	980	0	7	10	39
136	329	854	24.4	30.7	10.0	99.9	6230	1230	150	1160	110	420	0	77	532	15	0	17	2
202	402	1738	14.5	17.6	22.0	99.9	5390	420	120	1020	160	260	0	284	459	48	74	79	20
204	403	853	30.3	36.3	1.3	3.5	6470	1170	210	1180	310	280	108	352	504	80	107	109	39
213	404	1530	24.0	28.7	9.3	3.8	5400	1320	200	670	130	250	63	250	353	61	64	66	35
205	405	1544	17.0	20.4	23.0	6.7	9710	2690	390	1470	270	580	70	177	624	53	83	69	68
214	411	1600	17.0	15.8	15.0	2.2	7910	5370	650	1210	180	370	112	122	628	69	24	45	60
209	426	940	27.5	23.9	9.6	0.5	3180	1830	60	970	90	330	52	229	486	37	44	49	13
210	430	1500	16.7	14.8	23.0	2.1	5610	1830	180	1950	23	610	130	389	997	69	101	99	30
211	501	750	24.2	20.3	12.0	2.5	5620	999	999	910	50	320	69	258	451	51	67	65	35
317	515	1400	18.8	16.4	28.0	5.1	11800	1570	140	2010	110	660	124	834	951	229	206	178	29
303	516	900	25.3	23.4	30.0	6.4	12300	1530	160	2710	310	880	109	480	984	175	174	157	51
302	521	900	22.5	15.8	46.0	99.9	21100	2860	200	4710	140	1660	35	505	2088	129	129	141	87
304	522	743	25.5	14.6	45.0	6.0	20100	2520	220	4790	50	1860	52	382	2084	123	118	144	63
309	604	820	29.0	24.4	22.0	3.2	9360	1040	110	640	60	450	39	342	440	112	94	115	35
310	605	1330	18.9	15.9	39.0	7.2	16000	1990	210	2720	290	780	209	628	1016	250	144	169	62
313	607	745	30.0	25.7	17.0	99.9	7170	470	50	540	70	90	233	610	257	114	122	150	9
316	615	1055	22.9	19.3	27.0	5.1	12200	1390	140	1070	630	470	171	493	573	293	108	119	24
402	620	745	25.0	27.4	39.0	6.2	15700	1550	170	2930	1030	1040	88	329	1066	467	145	87	56
408	626	735	24.1	26.7	32.0	5.5	11700	1130	130	1930	240	800	15	160	709	173	64	88	48
406	627	750	23.6	25.1	35.0	4.9	12400	1180	150	2590	360	960	59	241	889	201	77	85	39
401	628	735	27.3	25.8	43.0	99.9	14300	1400	160	3140	500	1050	115	389	1187	308	123	127	48
318	702	700	24.6	22.9	33.0	5.2	9450	1180	140	2210	180	720	16	262	817	98	85	76	39
314	705	710	24.0	21.2	28.0	4.5	11700	1280	150	2130	120	820	75	266	1021	202	38	68	65
400	709	948	21.7	20.5	14.0	2.8	7620	550	90	1550	0	500	999	222	539	69	63	59	61
320	710	740	23.3	22.4	22.0	4.9	10700	1010	160	1580	50	650	57	412	462	220	93	116	45
312	711	710	24.5	18.4	24.0	6.6	12100	1930	200	1970	80	780	125	421	1079	190	94	110	54

99.9: data missing

Each line of data (above) appears as two (2) records in the data file. All data on this side of the line are in the first record.

All data on this side of the line are in next record.

Appendix K

RESEARCH DATA FORMAT, CHINA LAKE, 1979

See note on sample data printout (below) for record format.

Specifications for Coolwater and Lucerne Tape
Pibal Data

* Block size = 132

* Non-labeled tape

9 TRACK, 1600 BPI, EBCDIC, BLK^{Factor}~~SIZE~~ 10, RECORD LENGTH 132

Please be aware that each observation consists of the following:

1) Header Record Format A (70)

It is composed of the site name, date, time, and miscellaneous comments:

SITE NAME	DATE(MMDDYY)	TIME(HHMM)	COMMENT
-----------	--------------	------------	---------

2) Data Record

Immediately follows directly beneath Header Record and is composed of time interval, azimuth, and elevation as follows:

TIME INTERVAL (MINUTES:SECONDS)	Format F 6.2 (e.g., 3.30 corresponds to 3 minutes:30 seconds)
AZIMUTH (DEGREES)	Format F 6.1
ELEVATION (DEGREES)	Format F 7.1

3) Trailer Record

Is found at the end of the data record which signifies the end of a pibal observation and is always denoted by "-1.0" in Format F 5.1.

Period of Record

File #1	November 2, 1979 - June 17, 1981
(Coolwater)	January 7, 1982 - December 31, 1982

Note: there is no data between July and December 1981 as the station was shut down during this time.

File #2	December 19, 1979 - September 28, 1981
(Lucerne Valley)	

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